

**DEVELOPMENT OF AN ASSESSMENT TOOL FOR
IMPROVING OPERATION AND MAINTENANCE
REQUEST FOR PROPOSALS OF HIGH-RISE
BUILDINGS IN SAUDI ARABIA**

BY

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A Thesis Presented to the
DEANSHIP OF GRADUATE STUDIES

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

DHAHRAN, SAUDI ARABIA

In Partial Fulfillment of the
Requirements for the Degree of

MASTER OF SCIENCE

In

ARCHITECTURAL ENGINEERING

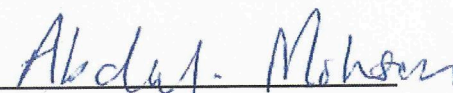
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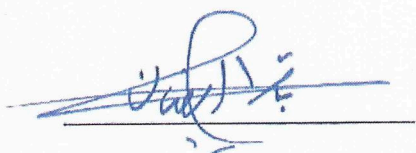
DEANSHIP OF GRADUATE STUDIES

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To my Parent, Sisters, Wife and Children

ACKNOWLEDGMENTS

First and foremost, thanks to Allah (SWT), who gave me the courage and patience to successfully accomplish this work. Acknowledgments are also due to King Fahd University of Petroleum and Minerals (KFUPM) for offering me all of their facilities and support.

Also, I would like to express my special expression of gratitude to my thesis advisor, Dr. Abdul-Mohsen A. Al-Hammad for his guidance, encouragement, supervision, and support from the preliminary to the concluding level which enabled me to develop an understanding of the subject. My gratitude is also extended to Dr. Mohammad Hassanain and Dr. Adel Alshibani for their useful comments, remarks, and engagement throughout this work.

Lastly, I offer my regards and blessings to all of those who supported me in any aspect during the completion of this work. Special thanks to all members of my family, and my friends and colleagues for their support and encouragement.

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LIST OF ABBREVIATIONS

RFP	Request for proposal
RFI	Request for information
RFQ	Request for quotation
QCBS	Quality cost-based selection
O&M	Operation and maintenance
MOMRA	Ministry of municipality and rural affairs

ABSTRACT

Full Name : Aymen Aljond Nor Addeen Alsarory

Thesis Title : Development of An Assessment Tool for Improving Operation and Maintenance RFP of High-Rise Buildings in Saudi Arabia.

Major Field : Architectural Engineering

Date of Degree: May, 2017

Saudi Arabia is witnessing an extraordinary development in many aspects. Most of this development is realized in the construction industry. There was a priority for spending the budget mainly on operation and maintenance projects. The high rise facilities require extensive care from the first phase of the operation and maintenance to acquire the work as per accurate and detailed documents. Moreover, it should be operated by seeking the most creative solution rather than seeking the lowest price only. The purpose of this research is to formalize the development of an assessment tool for the request for proposals for high rise buildings in Saudi Arabia. The methodology adopted in this research consists of three main parts. The first part uses the extensive knowledge through a literature review to identify the main and sub elements of the RFP, in addition to a series of interviews with experts in maintenance to develop the assessment tool. The second part involves the assessment of the resulting main and sub elements of the RFP through conducting in depth, well-structured surveys of experts in the maintenance of high rise buildings. Based on the results obtained from the assessment, the assessment tool has been developed and applied to evaluate the current practice in three case studies to test its practicality. The significance of this study stems from the fact that at the current time there is no such assessment tool in Saudi Arabia and it is expected to help in saving the time and cost of these projects and eliminating any inconsistency or conflicts during the construction process. In addition, using such an assessment tool consistently will assist in improving the proficiency of contracts, providing a high level of satisfaction for developers of these facilities, and increasing the protection of the investment in high rise building facilities.

ملخص الرسالة

الاسم الكامل: أيمن الجند نور الدين السروري
عنوان الرسالة: تطوير أداة تقييمية لمستندات الدعوة الى المنافسات (RFP) في مشاريع التشغيل والصيانة للمباني العالية في المملكة العربية السعودية

التخصص : هندسة معمارية

تاريخ الدرجة العلمية: 1438 هجرية

تشهد المملكة العربية السعودية نموا وتطورا في مجالات عدة ويتركز هذا التطور بشكل ملحوظ وجوهري في مجال صناعة التشييد والبناء وفي السنتين الأخيرتين تركزت ميزانية الدولة على مشاريع التشغيل والصيانة. ان المباني والمرافق عالية الارتفاع تتطلب عناية شديدة منذ المرحلة الاولى لأعمال التشغيل والصيانة وهي عملية استدعاء المقاولين لتنفيذ الأعمال وفق مستندات واضحة ودقيقة تضمن سير التعاقد والتنفيذ بشكل قانوني وسليم علاوة على ان يكون التنفيذ وفق افضل الحلول الإبداعية من قبل المقاولين المتقدمين للتنافس بغض النظر عن السعر الأقل للمتقدمين. ان الغرض من هذا البحث هو تطوير أداة تقييمية لضبط مستندات التقديم على المنافسات (RFP) للمباني العالية الارتفاع في المملكة العربية السعودية. تمت منهجية البحث عبر ثلاثة أجزاء رئيسية. يتلخص الجزء الأول عبر دراسة دقيقة علمية وتحليل للأبحاث السابقة والحالات المشابهة عالميا ومحليا بالإضافة الى مقابلات واسئلة تم توجيهها للمختصين في المجال والوصول الى صيغة موحدة للعناصر الرئيسية والفرعية لهذه المستندات. يتلخص الجزء الثاني عن طريق عمل استبيان ومسح ميداني يجيب فيه الخبراء في هذا المجال عن أهمية وضع الأداة التقييمية للعناصر الرئيسية والفرعية لمستندات التقديم على المنافسات بحيث يتم التأكد من أهميتها. إن النتائج التي تم الحصول عليها من الاستبيان تم استخدامها وتطبيقها على ثلاث حالات واقعية لمباني عالية الارتفاع في المنطقة الشرقية لفحص توفرها وإمكانية تطبيقها والعواقب التي تسبب فيها غياب بعض او كل العناصر. لقد أظهرت النتائج النهائية انه لا توجد أداة تقييمية وارشادية لإعداد هذا النوع من المستندات في المملكة العربية السعودية للمباني عالية الارتفاع وبالتالي ستساهم هذه الأداة في توفير الوقت والتكاليف وتفاذي أي تضاربات او تناقضات او قصور في فاعلية العقود اثناء تنفيذ المشاريع وبالتالي سينعكس إيجابا على مطوري هذا النوع من المشاريع وسيضمن الاستثمار الأمثل لمشاريعهم.

CHAPTER 1

INTRODUCTION

1.1 Background

The building's operation and maintenance plays a significant role in the project life cycle, since it establishes a major facility success factor to keep the facility enduring efficiently from the built environment or business direction. Therefore, it should be taken with highest importance from the first step in calling the service's vendors and operators who they will be invited for that purpose.

In eastern province of Saudi Arabia and the huge buildings construction as well as the sophisticated technologies being used recently in the most of buildings which require best practices of controlling and operating these kinds of systems.

Most of the engineering consulting offices in Saudi Arabia prepare the projects documents for bidding containing only drawings, poor specifications and rarely random bill of quantities and submit it to the client to distribute it to the bidders. These components and many other items shall be put together and attached by request for proposal (R.F.P) which includes all the required data to gain the suited vendor with best solutions for operating and maintaining the prescribed facility and should be prepared by the specialized

engineering office externally or by the project team assigned to this task internally by the operation and maintenance department's assistance.

Without attracting the appropriate vendor or contractor to do so, the owners /developers will lose their efforts and investment that the facility essentially had been planned and built for.

It is a fact in many companies which have significant demanding and needs for organizing their works but they don't have experts or resources to provide those needs internally. in similar situations, it is difficult to determine which outside partner or clients must be with during the out-sourcing works.

During the past periods of experiences in such case, the exact answer of this demand is Request for Proposal. An RFP is an article that defines a project's requirements in a particular area and call for projected solutions laterally with identifying the cost and time scheduling as well as any other details from competent vendors and vendors)". (*Chris Peters*2015 ,).

"A request for proposals (RFP) is usually used to choose a firm in the services industry". (*AIA Knowledge Resources, 2008*)

"To justify issuing a request for proposal, the following three reasons would be sufficient. (*Chris Peters, 2015*)

- acquiring the best suited supplier for the needs of clients and its requirements.

- Accountability and good governance.
- Needs assessment.”

The Request for Proposal (RFP) process is used to produce a service provider proposal for an exact invention, facility, or solution. It is clearly seen in IT departments, this frequently found into the acquiring of IT services, hardware, software or the combination of both. *(Andrew Makar, 2011).*

Andrew Makar (2011) reported that The Request for Proposal means huge amounts of money to a vendor and signify a strategic effort for both firms. The purchasers and the clients want to get the best solution of their money spent on, and contractors want to compete fairly for the business. Simultaneously the Price isn't the only factor in success of this process.

David Kutcher (2009) came up with the same thought of Andrew Makar, 2011 stated above by his report saying that although the best products at competitive prices are the deciding factors for the clients but also as an evaluation technique for resulting in that intangible "best fit"

Tony Kinard, Jan (2011) decided that Creating a good request for proposal (RFP) and handling a well thought out process to acquire and hire the right partner for your corporation. Writing a strong and adequate RFP will let vendors to proficiently gain a decent understanding of your needs and submit a higher quality response and better accuracy on objects touching scope and budget. An appropriately planned tactic will also

help to expressively ease the overall vendor selection process and significantly improve the chance for the best probable result. That's means it can be resulted either in a great success or a total disaster for all the participated parties.

The above definitions of R.F.P clearly illustrate this type of solicitation and its best using in the projects at all their phases as well as concentrating in its contribution in controlling the success of those phases.

1.2 Statement of Problem

Most of the engineering consulting offices in Saudi Arabia prepare the projects documents for bidding containing only drawings, poor specifications and rarely random bill of quantities and submit it to the client to distribute it to the bidders. These components and many other items shall be put together and attached by request for proposal (R.F.P) which includes all the required data to gain the suited vendor and should be prepared by the engineering office externally or by the project team assigned to this task internally.

The weakness and discrepancy of these documents in operation and maintenance led to many problems and delay in projects delivery. Moreover, claims and confusion are the major results from that.

The buildings operation and maintenance plays a significant role in the project life cycle, since it constitutes a major facility success factor to keep the facility ongoing efficiently from the built environment or business orientation. Therefore, it should be taken with

highest importance from the first step in calling the service's vendors and operators who they will be invited for that purpose.

In eastern province of Saudi Arabia and the huge buildings construction as well as the sophisticated technologies being used recently in the most of buildings which require the best practices of controlling and operating these kinds of systems.

Without attracting the appropriate vendor or contractor to do so, the owners /Developers will lose their efforts and investment that the facility essentially had been planned and built for. The owners / developers nowadays suffer a lot and they are asking for the reasons of missing the control of operating and maintaining their business effectively.

The employment of unskilled staff in preparing a request for proposal will guide to several and vital mistakes as well as misleading of the business situation in the clients generally and for the project itself.

For summarizing the above reasons, we can get the principals of getting a full set of the professional and technical documents that fulfill the owners / developers needs which is the Request for proposal (RFP).

1.3 Significance of the study:

The study aims to develop an assessment tool issuing Request for proposals (RFP) in the operation and maintenance phase in building projects. This tool includes all the divisions and main elements in the (RFP). Recently this type of technique has been dispersed to

subdivisions led to miss its importance in many clients such as overlooking the reputation of the vendor for the sake of getting the lowest total cost of the contract.

1.4 Research objectives

The objectives of this study are:

- 1) Developing an assessment tool for elements of R.F.P for facilities of high-rise buildings in Saudi Arabia. This involve:
 - a) Identifying the main elements in RFP for operation and maintenance projects
 - b) Assessing the importance and significance of these elements by maintenance experts and developers to be used in operation and maintenance in Saudi Arabia.
- 2) Conducting three case studies to demonstrate the applicability of the developed assessment tool for RFP Elements.

1.5 Limitations:

The followings are the limitations of this Study:

- 1) Saudi Arabia- Eastern Province as a region of the study.
- 2) High-rise Buildings as a field of study.
- 3) The questionnaire and interviews are limited to the biddings and purchasing departments, the operation and maintenance managers and the developers of those types of buildings who is their business located in the eastern province.

- 4) The case studies will be conducted in three office buildings range from ten floors up to forty floors located in the eastern province.

1.6 Research Methodology

1.6.1 Achieving the first objective

The first objective will be achieved through conducting the following research activities as shown in Figure 1-1.

Phase 1: Literature Review

Extensive review of literature, including RFP Standards and best practices in the field to identify the main elements of the assessment tools request for proposals (managerial, technical, and financial elements).

Phase 2: Data Collection

This phase involves two research activities, as follows:

1) Pilot-Test of the Developed Questionnaire Surveys

Conducting a pilot-study through interviews with five operation and maintenance experts of high rise constructions, with at least 15 years of experience, to assess the proposed technical and financial criteria to be used for assessment tools for operation and maintenance RFP and solicit additional ones.

2) Development of Questionnaire Surveys

Developing and administering a well-structured survey to assess the identified administrative, technical, and financial criteria for the request for proposals in high rise buildings. The questionnaire will involve two parts:

Part I. includes overall information of operation and maintenance RFP. experts' clients, department, position, and years of experience.

Part II. Includes a listing of the administrative, technical, and financial criteria that will be assessed by the experts using Likert type scale to solicit their opinion on the desirability of including these criteria. The list of the criteria is expected to include: transparency, period, confidentiality, weighted evaluation, contract form, appendices and Additional criteria may result from this survey. The target number of respondents is 25 to ensure reliability.

Phase 3: Development of an Assessment Tool for operation and Maintenance RFP.

This phase involves two research activities, as shown in figure 1-1

- 1) Analyzing the obtained data statistically to identify the frequency of the technical and functional criteria by using a Likert type scale.
- 2) Developing assessment tools for operation and Maintenance RFP. All assessed elements that are recommended by at least 67% of the survey respondents will be included in the assessment tools.

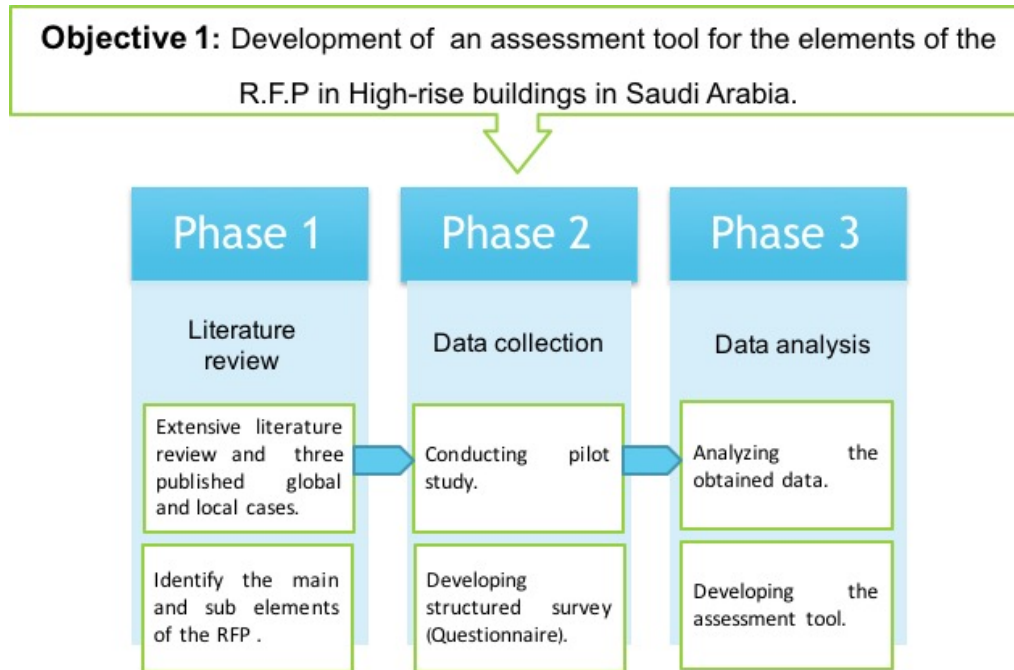


Figure 1-1 Methodology Chart of Achieving the First Objective.

1.6.2 Achieving the Second Objective

The second objective will be achieved through conducting the following research activities as shown in Figure 1-2.

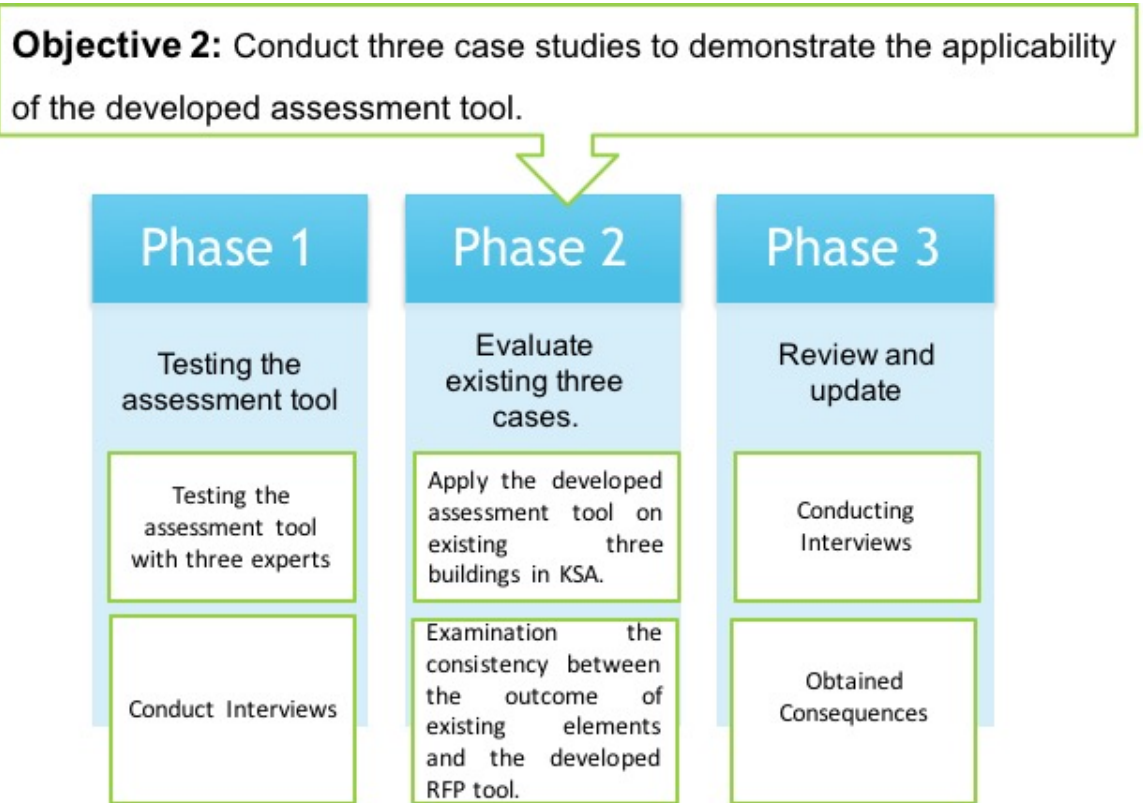


Figure 1-2 Methodology Chart of Achieving the Second Objective

1. Testing the assessment tools using three experts in the operation and maintenance of high rise buildings.
2. Apply the developed assessment tools for operation and maintenance on three high rise buildings in Saudi Arabia to evaluate and assess the existing operation and maintenance RFP practices. In addition, the application of the assessment tools is expected to provide additional applicability for it by checking the consistency between the results of the assessment tools and the

operation and maintenance RFP practices review and apprise the assessment tools considering the above mentioned five cases.

1.7 Structure of the Thesis

The thesis is organized as follows:

Chapter 1: Introduction

This chapter provides the topic background, and it offerings an overview of the problem statement, thesis objectives, and the methodology used, the significance of the study, finally it provides the scope and limitations of the study.

Chapter 2: Literature Review

This chapter provides a vast analysis of literature, including RFP standard formats to identify the main elements of the assessment tools for maintenance management (technical and financial criteria).

Chapter 3: Development of an assessment tool for main elements of the request of proposals in O&M in High Rise Buildings.

This chapter presents of the Statistical Analysis that used for the analysis, results, and major findings. Also, this chapter provides the developed assessment tools for main elements of the request of proposals in O&M in High Rise Buildings in Saudi Arabia.

Chapter 4: Implementation of the Developed Assessment Tool

This chapter contains the application of the developed assessment tools for main elements of the request of proposals in O&M in High Rise Buildings in Saudi Arabia to demonstrate the applicability of the developed assessment tools and assess the current R F P practices.

Chapter 5: Conclusions and Recommendations:

This chapter summaries the conclusion of the present study, and providing a recommendation for upcoming studies and researches.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, the definition of RFP, its operation, maintenance, and its objective; as well as the state of the maintenance management of commercial buildings in Saudi Arabia will be introduced. The RFP standard format and its implementation in well tried cases will be discussed. Also, an overview of an effective criteria and selections system will be investigated. Lastly, the chapter will present a review of the literature through analyses and investigations of the related published research in the field.

2.2 Background

2.2.1 Operation and maintenance of construction buildings

2.2.1.1 Definition of operation and maintenance

Don Sapp (2015) published an article through the National Institute of Building Sciences and defined facilities operations and maintenance as incorporating the wide-range of services which are mandatory to guarantee that the built environment will accomplish the purposes for which a facility or project was designed and constructed. The classical

definition of operations and maintenance includes the day-to-day activities compulsory for the building, its systems and equipment to accomplish their planned purpose. Operations and maintenance are combined into the common term stated previously because the buildings can't be operated at their highest level of effectiveness without being maintained.

Baba Shehu Waziri (2016) defined maintenance by its purpose as that which is carried out to retain the value of an investment, keeping the building in a condition in which it continuously fulfils its function while presenting a good appearance. Maintenance can therefore be referred to as all the necessary work done to preserve a building with its finishes and fittings so that it continues to provide the same, or almost the same, facilities and amenities and operate as efficiently as it did when it was built.

The British Standard (BS 3811: 1984) defines maintenance as: a mixture of any actions that shall be taken to return the item to or bring it back to an suitable condition.

According to Wordsworth (2001), maintenance can be defined as “the action of the initiation, clients, and implementation of a sequence of works”. Maintenance is a key feature in encompassing the economic lifecycle for construction, and so the main causes of maintenance improvement are reactions and finances.

Arkansas (2009) defined maintenance as any action or enhancement to a facility and, if necessary, related areas, such as the physical plant and grounds, that sustains,

preserves, or keeps the state of condition (or efficiency) of the facility and bring it back to the original condition of efficiency.

The previous definitions both illustrate and prove the unity of operation and maintenance in the construction industry, as well as the economic value of these phases.

All the previous studies and authors have confirmed the importance of the operation and maintenance phase, however they don't define the operation phase clearly in their studies because operation and maintenance are a massive body which no one can perform without the other.

2.3 High Rise Buildings

2.3.1 Definition

Chau, Yau, Chung (2006) identified that high rise buildings are universal in most urban cities, such as New York, London, Paris, Tokyo, and Hong Kong. In the central areas of these cities, rents are high and the supply of developed or developable land is limited. The consequential high possessions charges give developers a strong financial incentive to develop tall, dense buildings in order to achieve maximum development revenues.

Elsevier (2009) published a book titled 'high-rise security and fire life safety' in which he observed that most countries use the term 'high-rise buildings' while countries like Britain and certain other European countries call them 'tower blocks'. While there is no agreement on a single definition for this term, it can be defined as follows:

There was a definition gave by The International Conference on Fire Safety in High-Rise Buildings as any building where the impact of evacuation has been affected by its height. Another meaning of high-rise buildings is that the building consists of seven stories and higher, while this term can be stated as height (in feet or meters) rather than stories. Also, high-rise buildings are considered to be buildings where the height reaches the maximum of the available firefighting equipment. This range is between 23 meters and 30 meters, or from 7-10 floors per the slab thickness. Generally, the exact height of high-rise buildings is specified by the codes of the countries or states where the project is placed.

2.4 Reasons for spreading out high-rise buildings

Elsevier (2009) listed two reasons that he thought give the best explanation for this:

First, the huge populations, principally in urban areas, produce significant demand for tall buildings due to increases in population and residence density, as well as rising economies in the major cities of the world which result in increasing demand for these types of buildings. **Second**, the human factors in urban and rural design which affect the cost of livability and its quality are neglected.

In Saudi Arabia, and from the first oil revolution in the previous century, the first change in building height started in the cities built around the production of oil and the operation of oil refineries such as in the eastern and western provinces.

It is clearly seen that there was not much awareness of these types of buildings due to the traditions in the gulf region which people had followed for years living in the desert.

Recently the business sector and investors travelled around and they came back with the latest technologies in the building industry. As a result, we can easily find dozens of towers in a single city like Khobar or Dammam.

2.5 Types of High-Rise Buildings

The influence of security and fire safety requirements on identifying the different high-rise building types have been clearly classified by Elsevier (2009) in his book which addresses the following ones:

- Office buildings.
- Residential buildings.
- Hotel buildings.
- Mixed-use buildings.

2.5.1 Factors Affecting the Operation and Maintenance of construction Buildings

Joseph H.K. Lai and Francis W.H. Yik, (2007) reported that the performance of constructions depends on the appropriate operation and maintenance of facilities which, in recent commercial projects, naturally include setting up systems such as HVAC, electrical, and sanitary. To achieve reduced costs and better quality of service, these O&M services are normally subcontracted, either for whole systems or part of them, either from managing vendors who provide a wide variety of professional skills or straight from workers with specialised skills in a specific trade.

Yahya, Ibrahim (2012) developed a perspective of the maintenance from the point of view of investment and they reported that the building values should be evaluated through the maintenance accomplishments invested in the building. In Malaysia, building maintenance is increasing rapidly and it depends on the investments and the efforts spent on all the maintenance activities regardless of its type, location, and possession.

Al-Sultan (1996) presented seven factors that affect the operations and the ways maintenance in the Kingdom. These factors include: decrease in expenses on new projects, the building of items and facilities of the infrastructure which become old and require new technologies of operation and maintenance, inaccuracies in the implementation of maintenance work, inflation in the Kingdom and the resulting increase in maintenance costs in recent years, and the fact that the kingdom's population growing rate is of 3.5 %. Adding to this , is the harsh effect of the Kingdom's climate on infrastructure and facilities, especially in the absence of the implementation of an effective standard during the design and construction phases.

Joseph H.K. Lai and Yik, (2007) referred in their paper titled 'Monitoring building operation and maintenance contracts' to the owner's at the time requesting outsourcing for his or her contracts. Before entering into contracts of O&M, an owner of a building may require a drafted solicitation for a tender on pointed for suitable material including the scope of work such as cases of building properties, the time of responses and the possible working hours, etc. The actions following the tender response consist of the tender valuation, the explanation of any indistinguishable data or plan in the tender, and

interviewing accepted tenderers before negotiating with the probable winner on an agreed amount.

Zul-Atfi Ismail, A. N. (2016) in their paper confirmed that implementing a system of maintenance management encountered many issues because of defect duplication and the deficiency in planning for the appropriate building management.

Joseph Hung Kit Lai (2009) presented the significance of satisfying the needs of O&M but the practitioners' motivations towards the preparation of proper budgets are not adequate. He also added that the range of problems are identified and any improvement in the framework measures are outlined. More development is required to help with achieving suitable budgeting for the sustainable operation and maintenance of the buildings.

Hassanain (2011) in his paper on determining the factors affecting the maintenance in hospital facilities published a survey conducted by Ali Alshehri (2009) of 200 building managers on the factors affecting the cost of building maintenance. These factors were "current building statues," "building period," "complaints received regarding building efficiency," "client's demand," "funding availability," "safety and health needs." The study concluded that the above-mentioned factors mainly affect the cost of maintenance.

Ali et al. (2010) identified critical influences affecting the cost of maintenance in housing projects. In total, 31 building managers were surveyed to assess the most critical factors. The study indicated that the factors which are highly important are "anticipation of

occupants,” “materials used,” “services applied,” “building period since construction” and “disability to execute management at the accurate required time.”

Alshehri, Motawa, and Ogunlana (2015) have discussed the difficulties facing the maintenance industry while also taking into consideration the effect of the development of the economy in Saudi Arabia. The major identified key factors affecting the maintenance values and their significance are:

1. Weakness of building regulations.
2. Using products and materials that are both locally made and imported without any restrictions or tests.
3. Various external standards and individual decisions were implemented without references.
4. Limitations of or poorly written operation and maintenance manuals.
5. Lack of coordination between groups of constructions and the operation groups.
6. Process of contractor’s classification and lack of uniform maintenance.

Ibrahim Al Buloushi (2012) through the Middle East Facility Management Association (MEFMA)published a study which reported that construction industry growth offers tremendous potential business for facilities management (projects worth more than \$630 billion were awarded to contractors in 2011 & 2012 across all the sectors including residential, commercial, hospitality & retail) where more than \$65 billion was awarded to construction contracts.

Saudi Arabia is experiencing extraordinary development in many aspects. Most of this development is realized in the construction industry, especially in the high-rise building sector that has undergone a tremendous boom in the last ten years.

Saudi US relations information services (JADWA) (2015), published a report with key observations as follows:

- The Saudi economy will remain slow in 2016 as the private sector progressively adjusts to the new rule of economic shortages and lower spending D.C. implemented by the government. The growing source of current spending is likely to be in operations and maintenance before major projects in the coming years become operational.
- Most real estate development firms have suffered from many problems which can be divided into six categories. These include technical problems, financial problems, management problems, people related problems, spare parts and equipment problems, and lack of institution and training facilities.

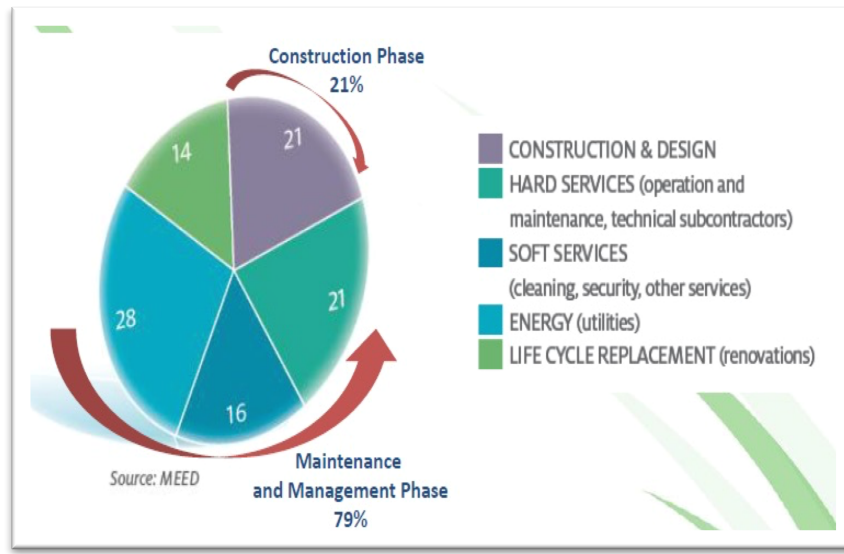


Figure 2-1 Cost Breakdown for Life Cycle of Projects (Source: MEFMA FM awareness conference-Riyadh,2012.

Deniz Ilter and Esin Ergen (2015) presented a record of (Lee and Akin, 2011) with a significant contribution in their paper that building maintenance incorporates the activities that the personnel of facilities management shall perform to confirm operating the facility to acquire the planned functions. It encompasses the majority of expenditures, as well as the extensive period in the building lifecycle, where more than 85% of total a project's costs spent over its lifecycle naturally accrue. They added BIM applications on the FM level, and the studies focusing on BIM applications in either maintenance or refurbishment are relatively more recent.

Utilization of BIM in FM enables life cycle data management, which is the ultimate goal in developing BIM models. Multiple researchers and practitioners acknowledge that BIM can be leveraged for performing FM activities, such as commissioning and closeout,

quality control, energy and space management, planning and performing maintenance, emergency management, retrofit planning and deconstruction.

Ahmed H. Al-Arjani (2001) reported in his paper that some of the factors that affected the maintenance and operation environment within Saudi Arabia have gone through many changes. These changes have been caused by different factors including; the decline of oil incomes, delays in monthly payments, and the cancellation of government loans given to contractors. These factors have had a great impact on the willingness of contractors to bid for maintenance and operation projects.

Anusha Pai, Suraj Rane (2013) reported that effective maintenance strategy involves a high degree of professionalism in terms of decisions taken regarding manpower, time and other resources. The maintenance activity should primarily concentrate on overhauling and repairing the failed system/component.

2.5.2 Summary

From the previous conducted studies on setting the operation and maintenance conditions in the construction projects we have noticed the following points:

1. There is a strong relationship between oil production and the assigned annual (O&M) contracts.
2. The technical and managerial factors are the most influenced in (O&M) projects.
3. There is an effect of human resources on developing the maintenance systems.

4. The importance of the operation and maintenance phase is reflected by its percentage overall of the Life Cycle Cost of the building (79%).
5. Saudi government and the private sector are directing the spending of the budget to operational projects rather than constructing new facilities, which enforces professionalism to positively contribute the best solutions in this field.
6. Personal judgment and various foreign standards are applied to the operation and maintenance contracts without regulations and legal power.
7. Operation and maintenance phases are integrated by O&M because the facility can't be operating at its peak efficiency without being maintained.
8. The infrastructure of the buildings in Saudi Arabia are affected by the kingdom's climate in the absence of standards of operation and maintenance during the design and construction phases.
9. Lack of emphasizing the importance of producing the best suited solutions for maintenance of buildings in order to reduce the costs and effort.
10. The fiscal budget announcement as well as the periodical decisions in Saudi Arabia can have direct short or long term effects on the manpower and time of finishing the tasks in the case of any delay or shortages.
11. Lack of using the latest technology of BIM in modeling the operation and maintenance works slow the processes down at this accelerated period.
12. High rise building maintenance should take full consideration for improving it regardless of age, type, location and even the ownership.

2.6 Request for proposals in the construction industry

2.6.1 Overview

A project must have a clear and conclusive goal. It must include diverse activities to achieve the general objectives. For this reason, facilities management is intricate as facility managers must develop a series of tools and methods to run and achieve a project successfully. Large projects require a lot of project management tools. They need several interrelated activities. This intricacy is related to a variety of aspects comprising the effort, the widespread scope of markets, and so on (*Investopedia*). It is commonly acknowledged that all projects have certain characteristics such as lifecycle or phases, defined date of start and end, explicit objectives, constraints of time and cost, appropriate budget, limited resources and tasks, an element of risk and so on. Every project has a schedule, budget, scope, and time. (*Investopedia*).

The US department of justice, (1999) identified the request for proposal (RFP) process as a core business line for procurement departments with clients over many years. In their handbook titled ‘A Guide for Improving RFP and Procurement Practices in Justice Technology Acquisitions’ they gave provided another explanation that the Request for Proposals (RFPs) are organized techniques for clients to get competitive offers for required items and benefits, and can be a priceless wellspring of new business for clients to the extent which you comprehend what they seem to be, the place to discover them, and how to settle on key choices with respect to them.

This research aims to study the case for employing strategic considerations in the application of RFP within clients. It also aims to develop an assessment tool for improving operation and maintenance requests for proposals of high-rise buildings in Saudi Arabia. The paper will tackle and cover the following items: the definition of R.F.P., R.F.P development lifecycles, components of R.F.P., and success and failure. The real design for how to compose an RFP can change, and RFP quality and fulfillment is frequently a point of heated discussion regarding the aggregate estimation of activities picked by this strategy.

2.6.2 Definitions of Request for Proposal

The Request for Proposals (RFP) is defined by many clients and researchers in several ways. It is defined as a solicitation that the clients or the clients' reports of the accessibility of subsidizing for a specific undertaking must be taken by rewarded clients when presented with a motivated offer and being broken down by the customer (*Investopedia*).

David Kutcher (2005) characterized RFP as a device for clients to locate the best administrations and items at competitive prices, however, in the meantime there is an assessment strategy for discovering the best fit for the client's needs. Moreover, Arts cape clients characterized (RFP) as an apparatus used to recognize a competitor for your enterprise.

“A formal request from a company or clients to a provider to submit an offer. The goal is to deliver a problem solution or fulfill the need of the clients which had been identified” (*Michael Asner*). In another definition he added that the request for proposal is also a method for gaining offers from competing firms and assessing those proposals in contradiction of definite requirements, using fixed evaluation criteria, such as weight and price. Consequently, the price won’t be the only selection criteria for a successful proposal.

Richard Fria (2005) also defined a Request for Proposal as an official invitation from an association to a contractor to present an offer. It is a formal procedure considering reasonable and open competition. The offer is to give an answer for an issue or a need that clients have identified. The Business word reference characterized RFP as a record utilized as part of fixed-bid acquisition systems where the buyer advises the supplier that there are specific administrations and conditions to be sought after and not just a value citation. It is also a procedure that gives an institutionalized structure to proposition accommodation and assessment.

The American Institute of Architects characterized RFP by its utilization to choose clients in the administration business. Similarly, Doctor Othman Alsalloum characterized RFP as a composed report which represents the necessities and prerequisites of clients of a certain office to execute an endeavor, while doing this to anticipate the determinations accessible for the focused clients to present their offer regarding numerous criteria such as (value, time and different elements).

Bud Porter-Roth, (2006) in his article published in the Information Management journal likewise gave another meaning of RFP as a standard apparatus utilized by governments and clients to buy hardware and administrations by advancing aggressive propositions among vendors. Moreover an RFP is principally a list of requirements that expresses the desires of the proposed system.

Bud Porter-Roth is an innovation expert who spends significant time in helping customers create and compose compelling RFPs, assess seller recommendations, and execute joint tasks. This is an after effect of his real-world ability.

Bud Porter-Roth in his book titled “Request for Proposal: A Guide to Effective RFP Development “ conceptualized the request for proposal as a device that a company utilizes to obtain many kinds of products or services from a supplier, for example: software, technical, or legal services; equipment and several types of products. As a result, different products or services need a different RFP.

Richard Friz (2005) gave another definition of Request for Proposal (RFP) as an invitation to sellers to present a composed offer to supply administrations. The RFP will require the seller to characterize the money related and/or administration responsibilities that include the offer. Obtaining this makes the RFP accessible to various sellers to survey and react with a proposition. Assessment of contending recommendations depends on different criteria, one of which is cost.

Steve Davis, AIA (2014) gave a definition of Request for Proposals as “a request for firms to submit their proposal for a project. It is applicable for goods or services where a city or county is required to take competitive bids resulting in a final product/building.”

Honey Bee Nutrition (2015) realized a Request for Proposal definition as an archive issued by a purchaser of administrations to dealers of administrations, asking for considerably more particular documentation of their experience, abilities, assets and related expenses, in this manner permitting the purchaser to figure out which merchant is most appropriate to finish the particular task required by the purchaser.

In Saudi Arabia, and from the investigation of the business sector, there are huge activities and tasks arising for the bidders without an RFP because they trust that the multifaceted nature and customs of the RFP procedure will be a guide for the high expenses of actualizing the administrations. RFP is an open access for potential vendors to present an offer to supply merchandise or administrations against a point by point delicate.

Based on the above presented literature which reflects all the possible definitions of request for proposals, it is evident the previous research has addressed a full understanding of the terms describing this solicitation, however there is a differentiation between the specialists in the business sector and the buildings and construction specialists.

Most of them defined the request for proposal generally, regardless of the service required. However, it is clear that Bud Porter-Roth and Dr. Alsalloum summarized all the possible meanings which can be used to describe the services as well as the assessment based on such considerations as value, time, and different elements.

A request for proposal in the operation and maintenance of construction industry can be defined as a set of documents attached by an instruction, commitments and regulations of the task they applied for and submitted to pre-qualified vendors or vendors to compete for the best solution with respect fairly to the client requirements and the competitive cost.

2.6.3 Purposes of request for proposals

The US department of justice (1999) classified the purpose of RFP so that clients are progressively using it to achieve their objectives of increasing profits and market share. As it is well known, projects are carried out by one individual or several individuals at all levels for the clients. Projects are directed by goals and framed by time. When projects are well managed, they will be delivered on time and within the limits of budget. The duration of projects may range from a few weeks to several years. The use of RFP is essential to the success of any clients nowadays. They are important because cliental strategies are applied by their revenues.

Andrew Maker (2011) reported that RFP is a requesting archive where clients present and evoke offers from potential sellers so as to secure an item or administration through the resulting business recommendations. The RFP procedure is intended to convey structure and straightforwardness to the acquirement choice, while lessening hazard through open necessities and exchange.

The objective segment recognizes the clients' general result for the subsequent contracted work, to give a reasonable understanding and enforceable result for the work to be attempted. The objective additionally recognizes the clients' expected result of the systematic offering process, prompting the recompensing of the subsequent contract(s). Its essential part at the RFP stage is to give bidders clear knowledge of the structure and number of impending mechanism(s) to be honored.

The RFP requesting technique is utilized when a client needs to survey and execute distinctive and new answers for a specific problem, project needs, or corporate progression. The RFP record gives advocates a diagram of the apparent or expected necessities. It doesn't give an itemized venture arrangement, as it is normal this is the thing that the advocate will create considering the RFP.

Negotiation Experts (2013) presented that the RFP lets counseling firms know the accessibility of an undertaking. It gives a practical details project Scope of Work (SOW) and related necessities so all clients are contending on the same premise and with the same data. Proposals from more than one counseling firm give a chance to contrast distinctive methodologies with the work, different cost proposition and the level of mastery of more than one firm. The RFP gives structure to the expert determination procedure to guarantee that the venture work is well understood, work prerequisites and contracting refined elements are not ignored, and the most perceptive proficient administrations contract is accomplished.

Carroll, Brian, J., (2007) classified the purpose of RFP in the following points:

- At the point when the clients have characterized a need and demand respondents to propose the best technique for achieving it;
- At the point when the skills, mastery, or specialized ability of the respondents will be assessed.
- At the point when the need includes administrations or a mix of supplies and administrations.
- At the point when the state may require the chance to request that respondents illuminate their recommendations by issuing questions, or to modify their proposition through a best and last offer procedure.
- At the point when cost is not the essential thought.
- At the point when details of the task can't be obviously characterized.
- On the off chance that a task fits any of these circumstances, then an RFP is likely to be the acquirement instrument for use (*Carroll, Brian, J.,2007*).

Based on the previous results about the purpose of a request for proposal it is evident that every presented purpose is very important and helpful in simplifying the process, as well as increasing the understanding of the task at the same time as reducing the level of ambiguity during the bidding process with the vendors and the selection process with the evaluators and lotteries.

Moreover, the clients' strategies which have been addressed by the US department of justice manual are highly important to link the project with the company portfolio. On the other hand, the purpose of surveying and executing new answers for problems and

business processes is also very important and these need to be assessed through our research in the Saudi Arabian market.

A Guide for Improving RFP and Procurement Practices in Justice Technology Acquisitions recommended to use RFP when:

- 1) The project's estimated cost is over \$10,000.
- 2) Availability of several vendors in the market who can interact and submit competitive products or services.
- 3) The requested results from RFP are technically multifaceted such as a combination of software, hardware, and services. On the other hand, it may also include custom boundaries or instructions that are not obtainable as standard products.
- 4) The project comprises significant adaptation of the software to satisfy the client's requirements, as well as considering that the product may encompass numerous agencies or sub delivery channels.
- 5) The system will be a new replacement for a current system.

2.7 RFI, RFQ, RFP and tenders

Grant McGimpsey (2015) aimed to show the difference between the RFP and tender. He stated an RFP is different from a tender. The contrast between a tender and a proposition is well clarified in the following:

- 1) A RFP is utilized when the buyer is searching for the best esteemed answer for the intention over an issue or to convey a decent administration, however it is not precisely beyond any doubt how to accomplish it.
- 2) A tender is utilized when the buyer knows precisely what administration they need and is searching for the best cost to convey it.

Negotiation Experts (2015) stated that the Request for Proposal is not a contract or an offer welcomed by the Specialist to the forthcoming Bidders or any other individuals. The reason for this Request for Proposal is to furnish the invested individuals with data which might be helpful in making money related offers (Bids) in compliance with this Request for Proposal. This RFP incorporates explanations, which reflect different suppositions and appraisals that have been in contact with the Authority in connection to the project. Such suspicions, evaluations and articulations don't indicate containing all the data that every bidder may require.

Humboldt State University defined the differences between the above disordered terms as follows:

A Request for Information (RFI) is a technique that is utilized when you need more data or explanation from many vendors, while you know primarily what you want. Normally an RFQ or RFP will be followed in sequence.

A Request for quotation (RFQ) is generally used when you need more information from the vendors on how to meet the necessities and/or how much it will cost.

A Request for Proposal (RFP) is used when there is a problem in the building or in the system and there is uncertain knowledge on how to solve it perfectly.

The above expressions and their meanings are the most proper of these methods and have strict procurement guidelines for timeline, content, and responses for the merchant.

From our experience of the Saudi market, it is clear that there is a huge misunderstanding regarding these terms, so obviously it is addressed that the vendors can't express, except the RFQ, which is well known to acquire the best price regardless of the best solution or alternatives.

Excluding the professional and systematic companies such as Aramco, the Royal Commission and Sabic which globally manage their worldwide systems and databases, we have noticed that systems through their categories of how these terms can be used and when, per the nature and size of the project.

Lastly, it is very important to assess the importance of this phase of recognizing the RFP purpose with a significant number of experts and firms in the field of operation and maintenance departments.

2.8 Cases and Conditions of RFP

RFP may not be fitting for all clients, and it is impractical for the Consultant, the workers or the counsels to consider the speculation of goals, money related circumstances and the specific needs of every gathering that peruses or utilizes this RFP (Negotiation Experts, 2015).

KK. Mercer County, NJ (2010) added that the Data given in this RFP to the Bidder(s) is on an extensive variety of materials, some of which may rely on an understanding of law. The data given is not planned to be a comprehensive record of legal necessities and ought not to be viewed as a comprehensive or definitive proclamation of law. The consultant acknowledges no obligation regarding the precision or generally for any clarification or emotion on law communicated in this regard.

He provided, the Authority, its representatives and counsels make no representation or guarantee and might have no risk to any individual, including any Applicant or Bidder under any law, statute, guidelines or directions or offence, standards of compensation or uncalled for advancement or generally for any misfortune, harms, cost or cost which may emerge from or be caused or endured because of anything contained in this RFP or something else, including the precision, ampleness, rightness, fulfillment or unwavering quality of the RFP and any appraisal, presumption, proclamation or data contained in that or considered to shape a portion of this RFP or emerging in any capacity for cooperation in this Bid Stage.

Maria Brett (2015) aimed to clarify that the issue of this RFP does not infer that the clients will undoubtedly choose a Bidder or delegate the Certain Bidder. All things considered, for the Project, the clients maintain all authority to discard or refuse all or any of the tenderer or Bidders without giving any cause at all.

Maria added that the Bidder might bear every one of its expenses connected with or identified with the readiness and accommodation of its Bid including, although not constrained to arrangement, duplicating, postage, conveyance charges, costs connected

with any showings or presentations which might be required by the Authority or some other expenses acquired regarding or identifying with its Bid. Every single instance of such cost and costs will stay with the Bidder and the Authority should not be obligated in any way at all for the same or for some other expenses or different costs caused by a Bidder in planning or accommodation of the Bid, paying little heed to the behavior or result of the Bidding Process.

The Government of British Columbia likewise came to characterize the RFP as one of the standard sales procedures that the administration utilizes to contrast the chances of agreements with secure administrations and it is utilized in certain circumstances for product procurement. The RFP procedure conveys structure to the acquisition choice and is intended to permit the advantages, dangers and expenses to be clearly distinguished in a straightforward way.

John Finke (2016) also addressed that the standard public RFP has evolved to where its focus is more on process than on outcome. If it is to be an effective decision-making tool for a local government, however, an RFP needs to be more outcome-focused and present a clear framework to judge responses

Honey Bee Nutrition (2015) reported that RFP is utilized when you have an issue yet don't know how you need to understand it and calculate the amount you would charge for executing your answer. An RFP is an acquiring and obtainment instrument that empowers purchasing clients to request superb items and administrations from the business sector at the best costs; this is achieved by selecting probable providers through a

focused offering. Establishments issue RFPs with a definitive goal of disposing of extensive value transactions for the supply of products and administrations.

A Record is utilized as a part of fixed offer obtainment techniques through which a buyer advises the potential vendors of the articulation and extent of the work, determinations, calendars or timetables, contract sort, information prerequisites, terms and conditions, depiction of products and administrations to be secured, general criteria, utilized as a part of assessment method, uncommon legally binding necessities, specialized objectives, directions for readiness of specialized administration and cost recommendations.

The Colorado State University Request for Proposal Manual addresses the factor which determines the successful bidder as a request for proposal which involves an offer for a bid which has the other selection criteria, plus getting the lowest value with the required specifications that the RFP is openly promoted and the vendors react with a definite proposition, not with just a value citation. They accommodate arrangements after a fixed proposition is opened, and the grant of agreement may not as a matter of course go to the most reduced bidder.

Using an RFP officially has the advantage of eliminating the possible complications of dealing directly with contractors without having an official list of requirements to start working from.

An RFP requires the RFP team to study the difficulties and issues regarding the project in larger detail than would typically happen. An RFP does not prefer one supplier over

another, but permits all to participate equally founded on the same set of directions and requirements.

British Columbia Manual, (2016) developed a manual titled “A Ministry Guide to the Request for Proposals (RFP) Process” in which it is stated that The RFP does not need to be complex, it should involve a rational amount of time and effort when preparing it. If the project is simple with an amount less than \$25,000 and the client involves a specific facility or is facing constraints such as a time limit, a direct reward must be available as an incentive to save time, but the major goal is to pay a care for contract negotiations which is reasonable for both client and vendors.

Complex multi-area projects and projects that encompass conveyance of more than one service in more than one location involve proper arrangement, therefore the RFP can be prepared to satisfy any ministry requirements and the ministries are recommended to arrange with the assigned department for support in preparing RFPs for multifaceted projects.

Bud Porter-Roth (2001) covered each development of the RFP procedure, offering dialect illustrations that exhibit both best practices and the most exceedingly awful practices to avoid. He demonstrated the importance of guaranteeing that RFPs contain data that is exact and point by point; how to guarantee clarity of presentation, structure, and clients that energize beneficial reactions; and how to dodge the most widely recognized pitfalls of the RFP procedure. The book incorporates an itemized scope composing every area of the run of the mill RFP, including regulatory, specialized, administration, valuing, and

assessment areas; and contains a broad viable direction on arranging and arrangement. Supplements present complete RFP illustrations, planning directions, investigation apparatuses, date-books, and different assets for embarking on RFP advancement.

As indicated by Porter-Roth (2001), RFP is a gathering of requirements that characterizes the items and usage administrations for a planned ECM venture. Vendors audit the RFP necessities and "propose" solutions that depend on that seller's items and administrations. Every proposal received might be receptive to the prerequisites, however it will contrast in the real items, administrations, and costs proposed.

Regardless of its significance as an underlying stride in the advancement of real specialized activities, the Request for Proposal (RFP) handle occasionally gets the expert consideration it merits. Utilized by government clients and by private enterprises to request recommendations from temporary workers and sellers, the RFP report is the foundation for a fruitful task. A plainly composed and legitimately sorted out RFP elucidates specialized objectives, conveys managerial and budgetary desires, and sets the tone for good correspondence and a trusting and gainful relationship amongst clients and contractual workers.

It gives data on what makes a decent prerequisite, how recommendations are assessed, and what insurances to take to avoid early disposal. This handbook offers a precise, thorough, and proficient way to deal with composing RFPs. It guides you step by step - from wanting to selecting a successful proposition - through the RFP procedure.

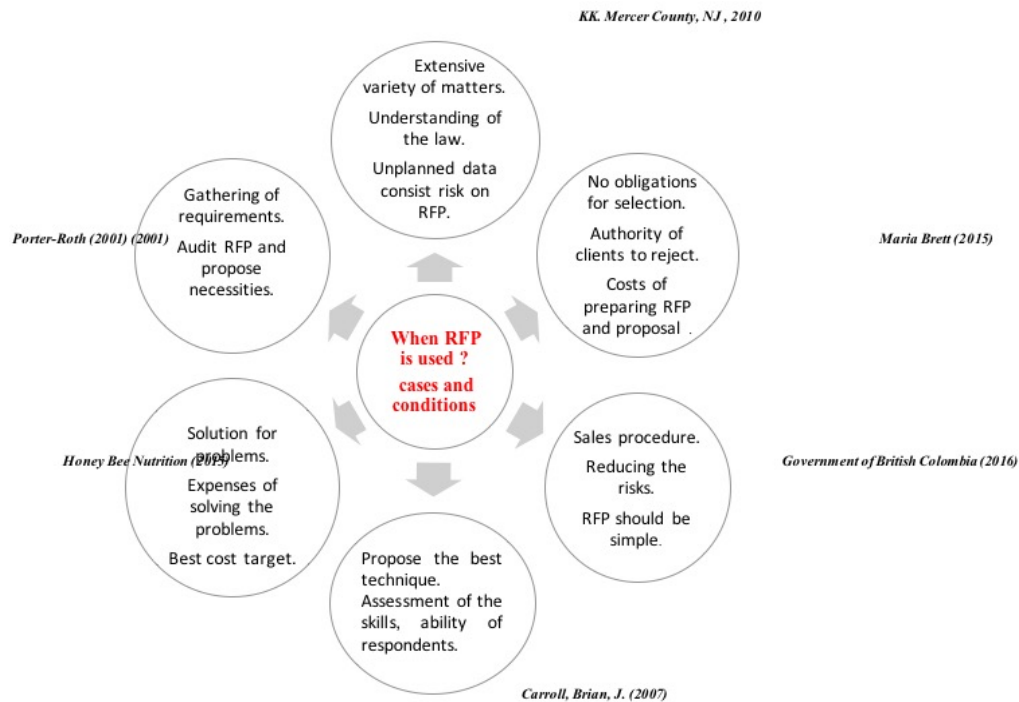


Figure 2-2 Cases and Conditions of RFP

From the previous illustration, it is clearly focusing on the RFP conditions that acquires solutions for specific problems for the clients. The problem should be focused and under the understanding of the law for both parties. The best techniques are the top priority in selecting the bidder. The time which will be allocated to prepare the RFP should be rational as the RFP shouldn't be complex.

2.9 Request for Proposals: Processes

In ‘Best Practices for Employing the Request for Proposal Process’, William D. Agee, Jr. came up with a new approach for organizing RFP solicitation which can be summarized in these points:

- 1) Pre-Solicitation Phase
- 2) The Solicitation Phase
- 3) Post-RFP Activities

Porter- Roth (2001) in his book “Introduction to Writing RFPs” presented ten key areas that any RFP should include for it to succeed in this phase, it includes: project personnel and clients of RFP, the schedule of the Project, the amount of Technology and education of vendors. the Estimation and development of the Budget, the return on investment (ROI) analysis, the development of RFP, evaluating the proposal, having awards and contracts, seeing the Post-RFP activities, personnel of the project and organizing for the new product. Additionally, he mentioned that the Planning stage must be a team action and all parties should participate in each planning meeting. This all depends on the company philosophy.

The RFP process can begin once all the fundamental requirements are fully defined then calling for purchasing and collecting this document will be free of unquantified

assumptions, as well as ensuring that all the constraints are well defined (Planning to Prepare the Project Request for Proposal (RFP).

Bud porter - Roth (2006) assessed in his paper 'The Managing of RFP Process' that creating and initiating an RFP could be classified as a project by itself and therefore it should have a project manager, planner, and scheduler. Also, the typical RFP may necessitate extra project resources because it may include several business components and supports from many company investors. The period for creating the RFP can last for 180 days or more until completion, and there must be a team who should participate during this time. The responsibility of the RFP project manager comprises providing the required resources to complete the RFP.

John Finke (2016) characterized six process groups to get a successful result in preparing the RFP as follows: Team qualifications, Creation of value, Contracting, Bidding, General-concept site plan, Construction risk and financial guarantees.

Frances C. Wilkinson B. (1997) described how to plan the RFP to get a successful binder. When there is a decision to issue an RFP the process of planning starts. As for libraries, either larger or smaller ones, a nominated person, task force, or committee are designated to manage the RFP process. The people in charge are supposed to develop a timeline, decide about, and arrange the meeting with the officer of the purchasing institution, and determine the binders to obtain the RFP. If it is for a small library, one person can manage

the RFP process. As for larger libraries with multi-library systems, or groups, a committee must be chosen, involving the staff for binding and preservation, as well as competent representatives from the department for collection development. Finally, it may also involve employees from the areas of technical and public services. This committee has functions. One of these functions is deciding on a timeline which discusses the details of all the phases. The timeline is supposed to determine the implementation of each phase. The tasks must include meeting with the officer of the purchasing department; identifying the commercial binders, arranging sites for binder appointments, formulating and typing the RFP, assessing the RFP answers, awarding the contract; and continuation with agreed tasks and awards.

Westfall (2011) classified a methodology and processes for accompanying an RFP.

Standard components of the RFP process include:

- 1) Determining a well-proportioned team
- 2) Creating a primary time schedule.
- 3) Meeting with the head of procurement for the project.
- 4) Short listing vendors and arranging visits to the site with them,
- 5) Writing the cover letter and the RFP.
- 6) Assessing merchant responses.
- 7) Awarding the contract.
- 8) Following up after the award.

Wk. Thomas (2013) in his dissertation released a new gap of RFP processes in the book titled Project Management Body of Knowledge which offers a multi-step process for RFP solicitation which includes the RFQ/RFP process and confirms the strength of scope development as a key to the RFP process. It also confirms the necessity for precision and extensiveness in the creation of the scope. Finally, he added that the project management institute doesn't introduce any measurable information about the relationship between the RFP phase which is the development of scope and the possibility of a successful result for the project.

Agee identified enthusiasm for RFP process as the key to success (RFP processes). Some important factors for success include:

- 1) Agreement of the Stakeholders and their understanding of the situation and agreed timeframes, as well as the executive support of the clients with any project of the scope requiring an RFP, is critical to success.
- 2) The type of solution offered must be evaluated.
- 3) The deadlines and assigned dates must be recognized, along with a suitable time to produce a quality RFP.

Also, he added points for the RFP processes as follows:

- 1) Establish, Study and Plan the RFP.
- 2) Business Problem definition.

- 3) Inform the Exact vendors.
- 4) Team selection.
- 5) Open Requirements determination and listing.
- 6) Draft revision.
- 7) Formulate the Request for Information (RFI) Document or Conference.
- 8) Conduct the Assessment.
- 9) Follow Up.

Based on the above results from RFP Processes and a literature review that has been conducted of several references, we have found inconsistencies with identifying the RFP processes, as well as is the lack of a holistic approach in the RFP Process globally. These common elements of the RFP process will be assessed to observe its importance when evaluating the successful RFP in high rise buildings in Saudi Arabia.

In another meaning, the RFP process will be classified by the following main phases:

As per William D. Agee, Jr's approach:

- 1) Pre-Solicitation Phase.
- 2) The Solicitation Phase.
- 3) Post-RFP Activities.

In Saudi Arabia and for assessment of these processes, we classified the RFP Process according to three main categories listed above, as well as the approach that came from Westfall, (2011) where the RFP process includes the following: determining a well-

proportioned team and creating a primary time schedule. In addition, meeting with the head of procurement for the project, short listing vendors and arranging visits to the site with them, writing the cover letter and the RFP, evaluating vendor responses, awarding the contract and following up after the award, will be assessed.

2.10 Request for proposals: elements and components.

2.10.1 Previous Studies

One of the steps that clients need to achieve their goals is a Request for Proposals (RFP) which is defined by several authors detailed previously in this chapter as a solicitation that the company or client announces regarding the availability of funding for a particular project which should be taken by the awarded company when it has submitted its competitive bid and it is being analyzed by the client.

(A set of documents attached to some instructions, commitments, and regulations of the task they applied for and submitted to pre-qualified vendors or vendors to compete for the best solution with respect carefully to the client requirements and the competitive cost).

The Public Private Partnership (PPP) (2014) of the government of India developed a manual related to the challenges that face the success of the bidding processes and concluded by recommending the importance of standardized forms which save both time and money, in addition to helping to avoid vital mistakes in the RFP in all its phases in order to gain a potential vendor.

The major factor for success in a PPP contract is the selection process through full transparency, and therefore it has to pass these two stages:

- 1) Request for Qualification (RFQ) is to attract the financial bid.
- 2) Request for Proposals (RFP) is to select the best vendor of those who already prequalified in the first stage (RFQ).

The Open Group, (NASPL), (WLA), QLot, (2007) assessed the main RFP processes and elements as follows: RFP Pre-Publication , RFP Publication, General Communications Policies for the RFP Process , RFP Clarification Questions, Pre-Proposal Conference , Modification/Withdrawal of Proposals, Modifications to the RFP , Proposal Submission/Receipt , Proposal Explanations, Evaluation Planning , Proposal Submission Requirements Review , Technical Proposal Evaluation , Pre-Qualification and Evaluation of Bidder Capability , Independent Review & Assignment of Individual Technical Rating by Technical Proposal , Evaluation Team Members , Technical Proposal Evaluation Team Review & Assignment of Consolidated Technical Rating, Technical Proposal Evaluation Team Review & Assignment of Final Technical Rating, Price Proposal Evaluation, Notification of Successful Bidder, Determine the Best Overall Proposal, Final Result on Contract Award Approval, Notification of Proposal Evaluation Outcome, and Contract Award.

The open group defines the requirements before RFP creation:

- 1) Business requirement definition.

- 2) Request for information (RFI).
- 3) RFP Drafting.
- 4) Schedule of Procurement.

For our case of the RFP process, they reported that a draft of the RFP should be issued before issuing the RFP to get comments and feedback from all concerned parties previous to finalizing the RFP scope.

This feedback should be given a specific period to evaluate the terms and conditions.

The Bidder should feedback to the draft RFP because the RFP draft may be issued via written reply, open seminar, or both as chosen by lottery.

The factors that the letter should consider to determine the required time to complete the procurement cycle include:

- 1) Writing and publishing the RFP.
- 2) Preparation of proposals.
- 3) Proposal evaluation and contract award.
- 4) Negotiation and contract signing.
- 5) Contract signing and implementation.
- 6) Engagement of consultants.

The lottery has to create a website to be used as the official RFP portal for the RFP and insure that the website is accessible to all bidders and contains all the sources for the relevant RFP information.

Wk. Thomas (2013) added that the RFP document includes the project scope of work, so it is the principal method of collaborating the project potential and necessities.

The Planning Commission - Government of India (2014) assessed that the typical RFP document involves the serious and exact needs that should be fulfilled for conducting an impartial and clear bidding process.

One of the most effective aspects that help in developing and helping to improve those techniques are the technical and financial considerations during preparation of the documents or solicitation which, directly or indirectly, will be sent to the competitive vendors to present their proposals to attract the best solution; and not the lowest price for executing the prescribed scope.

In Best Practices for Employing the Request for Proposal Process, William D. Agee, classified a new approach for organizing RFP solicitation processes which can be summarized in these points:

- 1) Pre-Solicitation Phase contains several elements includes: assessment needs and understanding, Pre-Qualified Service vendors, Pre-Developed Procedures, and forms.
- 2) Solicitation Phase: fixed team of technical review, create critical question for technical Conference, generate the RFP scope of work and recognize milestones and deadlines.

- 3) Post-RFP phase: create Post-award meeting.

The World Bank, Washington, D.C. (2002) published a manual of RFP preparation for selecting the consultants and classified the elements into the following sections:

1. Section 1. Invitation Letter
2. Section 2. Information to vendors
3. Information Sheet
4. Appendix
5. Section 3. Technical Proposal - Standard Forms
6. Section 4. Financial Proposal - Standard Forms
7. Section 5. Terms of Reference
8. Section 6. Standard Forms of Contract
9. Annexes.

Porter- Roth (2001) in his book “Introduction to Writing RFPs” presented that RFP archives will often give guidance on the most proficient method to structure the proposition. As a rule, the proposition ought to include:

- 1) “Overview of the project and managerial data section.
- 2) Technical requirements section.
- 3) Management requirements section.
- 4) Supplier qualifications and references section.
- 5) Vendors’ section.

- 6) Pricing section
- 7) Contract and license agreement section.
- 8) Appendices.

Some appendices are too extensive for the RFP body, as well as being costly to reproduce in hard copy, so the solution is to put it in the website that is assigned to the RFP so it can be easily accessed, reviewed and be economically effective.

Hussein Amery (2007) identified 16 key elements of any RFP which should be included to select the superlative value proposal:

Proposed personnel, approach or methodology, proposed work program, project management plan, specification of key results, detailed budget and cost estimates, agreement to financial assessment, the invitation letter, short-listed firms, QCBS (Quality Cost-Based Selection) or QBS, Information Sheet, Assessed person-months / Specifications and Content, Assessment criteria, Prearranged Proposal Set-up (Standard Forms), Terms of Reference, Contract's Draft and Specifications.

The elements are obviously influenced by the professionalism and the details that the teams are required to be shown regarding to the projects.

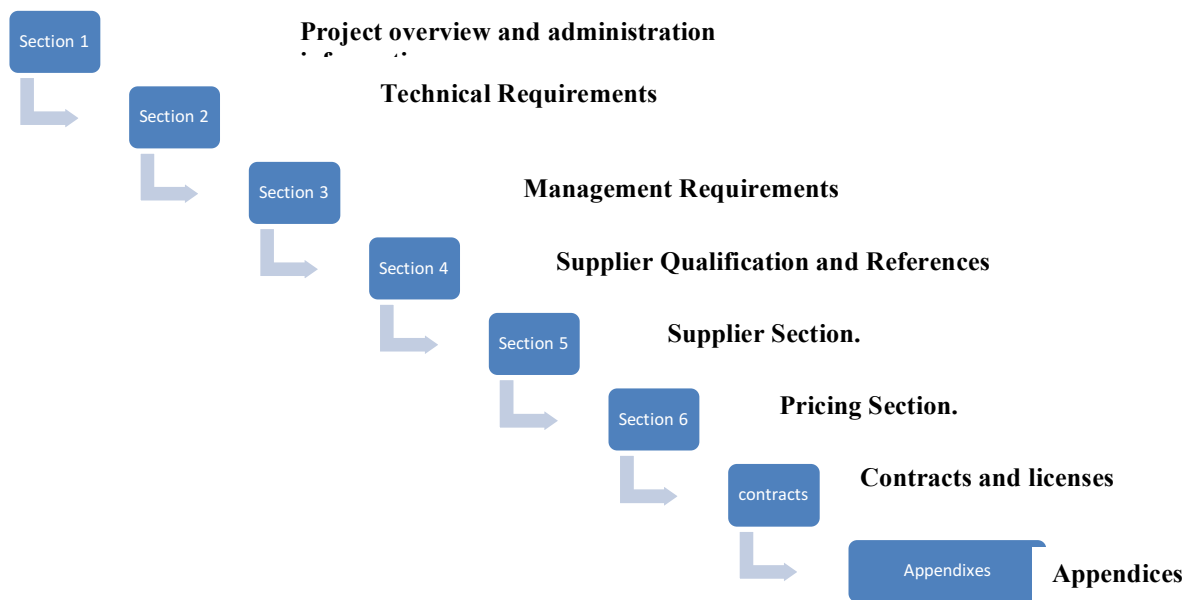


Figure 2-3 Components of R.F.P (Porter- Roth, 2001)

For example, it is noticed that Nacho Aviance R.F.P accomplished all the needed information in seven main elements which include:

- 1) Introduction.
- 2) Description of Facilities.
- 3) Requirement and Scope of Work.
- 4) General Provisions.
- 5) Proposal Submission.
- 6) Proposal Evaluation.

7) Additional Information

While the department of public works in the City of Hyattsville have determined detailed elements ,as well as including attachments and forms of Bid.

The common elements in all the RFPs are:

Part 1- instructions to the bidders

- 1) Invitation to bid
- 2) The date of solicitation
- 3) The project
- 4) Proposal contacts
- 5) Submission of proposals
- 6) Contractor information
- 7) Pre-bid tours

Part 2- general conditions

- 1) Scope of work
- 2) Duration of agreement
- 3) Quality control
- 4) Qualifications of workers
- 5) Insurance
- 6) Payments
- 7) Codes and standards

- 8) Taxes
- 9) Project conditions
- 10) Sequencing and scheduling

Part 3- landscape services

- 1) Turf maintenance
- 2) Tree and shrub maintenance
- 3) Ground cover & beds
- 4) Exterior color maintenance
- 5) Other services

Part 4- miscellaneous provisions

Part 5- bid forms

- 1) Bid form price authorization
- 2) Summary of experience
- 3) Quality assurance procedures
- 4) Labor estimates
- 5) Addendum – city contract

There were many details added to some RFPs which provided helpful guidance to vendors which can protect both the client (owner) and the awarded vendor during all the later project phases. Furthermore, it helps the invited vendors to decide either to participate seriously if they are qualified or to save the time and efforts of both.

These elements are:

- 1) Advertisement for Proposals
- 2) Applicable laws and regulations
- 3) Sample of intended contract when awarded
- 4) Requirements of quality and safety during project execution
- 5) Bonds and Insurance Instructions
- 6) Eligible Respondents
- 7) Pre-Bid Tour
- 8) Basis of Compensation
- 9) Codes and Standards
- 10) Format of Proposals

A Guide for Improving RFP and Procurement Practices in Justice Technology Acquisitions, U.S. Department of Justice, 1998 Classified the RFP Format to be in the following order:

- 1) A project leader contact name and number.
- 2) Delivery date, time, and place of proposals.
- 3) The project budget.
- 4) Detailed description of the services, goods or requirements.
- 5) Professional or business licenses requirements.
- 6) Explanation of the assessment factors.

- 7) Anticipated proposal format for responses.
- 8) Timetable of events of RFP process.

Eric Leland & Jason Salter in his book about the 'Nine Essential Elements' of an RFP identified nine elements of an RFP to save money and avoid the annoyances down the road.

These are:

- 1) Organizational Overview
- 2) Project Goals
- 3) Target Audience
- 4) Project Deliverables and Specifications
- 5) Project Requirements
- 6) Proposal Format
- 7) Request for References
- 8) Proposal Delivery Instructions and Contact Information
- 9) Proposal Evaluation Timeline

Nathan Huening (2014) published a website article on the topic of how to write a great RFP. He listed the below items as elements of RFP:

- 1) Brief Project Overview
- 2) Clients' Background
- 3) Project Goals & Target Audience

- 4) Sitemap
- 5) Scope of Work & Deliverables
- 6) Timeline
- 7) Technical Requirements
- 8) Principal Point of Contact
- 9) Budget
- 10) Ongoing Support / Retainer
- 11) Web Hosting
- 12) Analytics Software
- 13) Examples
- 14) Criteria for Selection
- 15) Format & Proposal Timeline

Encyclopedia of management, sixth edition, also recommended these key elements of an RFP:

- 1) Price quotations
- 2) Contract duration
- 3) Performance limits
- 4) Stipulated business requirements
- 5) Item listings
- 6) Guidelines for responding
- 7) Submission deadlines

- 8) Evaluation criteria
- 9) Contacts for channeling inquiries
- 10) Address of the company or clients

British of Colombia classified their standard format of an RFP as per the requirement that it should be provided to potential vendors and include the following:

- 1) background of the project and requirements.
- 2) ministry or client site location.
- 3) scope of the project.
- 4) key deliverables or results.
- 5) benchmarks and expectations.
- 6) risk and serious factors of success.
- 7) performance standards
- 8) governing legislation.
- 9) reporting requirements.
- 10) any information that some probable vendors may have already had access to that others have not.

The RFP should include a table of contents and a glossary to define terminology. Additionally, it should state the objectives, scope, overview and background about the projects, and clarify acceptable e-access (if the preferred subscription format is electronic

only). Specific instructions for responding to the RFP are normally stipulated by Purchasing (Micheline Westfall, Justin Clarke & Jeanne M. Langendorfer, 2013).

After many interviews with experts from the Dammam Municipality and real estate developers of towers projects in the field of operations and maintenance generally, and high rise buildings specifically, we noticed that there is a lack of unity in the RFP procedures and elements since they are not under the law of implementations during the bid stages. They added that RFP is a very important stage of project execution and needs to be unified and systematically organized to avoid any personal judgments.

2.10.2 RFP standard Template in Saudi Arabia government sector

The ‘Analysis of Standard format of RFP of Ministry of municipalities and rural Authority’ (MOMRA) (2009) in operation projects shows us the following key elements of an RFP:

- Section#1: project purpose and general definitions
- Section#2: instructions for bid competition
- Section#3: general conditions
- Section#4: technical definitions, contract scope and components of area scope
- Section#5: contractor duties and obligations

- Section#6: operations work
- Section#7: existing works
- Section#8: manpower and equipment to be used
- Section#9 monitoring and evaluation
- Section#10: contractor bid cost and schedules of prices, analysis method
- Appendix #1 Curriculum vitae for supervision staff
- Appendix #2 subcontractors list
- Appendix #3 clients chart of the project
- Appendix #4-time scheduling for the project period
- Appendix #5 service analysis statement

2.10.3 Analysis and Discussion

Based on the above presented literature, it is obvious that previous research has not addressed a holistic approach for developing the required technical and financial criteria for the generic RFP Documents of high rise buildings. Clearly, there has been some research on the request for proposal techniques in Saudi Arabia, but it is not enough and is still limited because most of this research was written from a practitioner's perspective and very few articles focus on systematic solutions to difficulties of maintenance, neglecting the RFP process as a key factor for success in all the operation and maintenance phases. Furthermore, in Saudi Arabia, most research on the request for

proposal documents systems for high rise buildings requires the need to develop assessment tools for its improvement.

The key to success in preparing this type of solicitation is to plan its phases carefully and with the input of professionals in the fields of operation and maintenance. in order to help to improve it day by day. Moreover, to avoid any unmeasurable mistakes that happen later in their client's projects.

2.11 Identification of the obtained elements of RFP

In Saudi Arabia, research on the request for proposals for high rise buildings necessitates the need to develop assessment tools for its elements. Based on the review of literature as indicated in sections (2.9.1 and 2.9.2), there are common and combined elements that occur in some references with another term in the other references.

Based on the previous analysis and discussion which have been presented, the life cycle of a request for proposal consists of three main phases as follows:

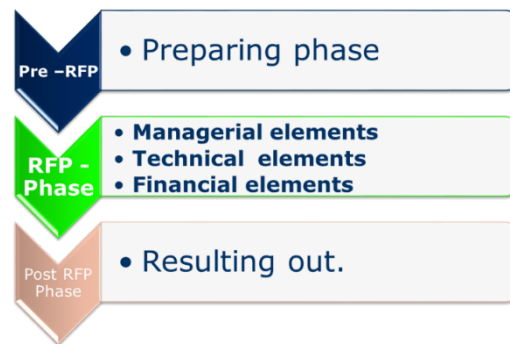


Figure 2-4 Life Cycle of Request for Proposal.

The second phase that is shown above for the whole life cycle is our field of research in this study and all the elements there will be assessed.

These elements have been classified into three main categories to group the common elements which address the same issue. These categories are as follows:

- 1) Managerial Category
- 2) Technical Category
- 3) Financial Category

The main elements are shown in the following tables. A wide scope review of literature in related areas indicates that there were variations between previous researches over defining these elements and their subdivisions.

2.11.1 Managerial Elements Section

2.11.1.1 Invitation to bid

This element was introduced by the City of Hyattsville (2013), as well as the U.S. Department of Justice (1998). They released the term “Advertisement for Proposals” and Nacho Aviance mentioned it in their introduction but not as a separate element as shown in table 2-1.

Frances C. Wilkinson and Sever Bordeianu (1997) presented this element in a cover letter.

The following points must be included:

- 1) information about the Project.
- 2) information about the clients.

The Community Preservation Corporation, USA, developed a manual for issuing an RFP for their facilities considering the introduction as a first section.

The British Colombia manual, (2010) classified this element in a cover page which contains:

- 1) The top section that contains the project title, RFP number, issue date closing date and time, contact person’s name, address, fax number, and/or e-mail address of the client, instructions for receipt of proposals (e.g., hard copy or soft format, required number of copies), date and location of the vendors meeting.

- 2) The bottom section of the invitation to bid is the Vendors Section. The Vendors Section must be completed and signed by the vendors (a compulsory requirement) and the signed cover page must be included with the proposal.

The City of Hyattsville (2013), gave more subdivisions of this element by adding the following:

- 1) Proposal submission instructions.
- 2) Appointment of Pre-bid tour.

The World Bank, Washington, D.C. brought the same elements that were described above as well as the following:

- 1) A short description of objectives and scope of the tasks.
- 2) Official acknowledgment of the invitation to bid receipt.
- 3) The RFP documents which are attached to this invitation.

The Guide for Improving RFP and Procurement Practices, (1998) confirmed the importance of:

- 1) Submitting the invitation to bid to the vendors by hand rather than sending it electronically.
- 2) Sending the invitation letter to a wide range of vendors rather than the shortlisted vendors that the clients have identified beforehand.

Table 2-1 Managerial Elements (Invitation to Bid)

No.	Category	Element	Author /Reference	The best suited
1	Managerial Elements	Introduction	Nacho Aviance	Invitation to bid
		Invitation to bid	City of Hyattsville	
		Cover Page	British Colombia	
		Target Audience	Eric Leland & Jason Salter	
		Not mentioned as a standalone element.	MOMRA	
		Letter of Invitation	The World Bank Washington, D.C.	
		Advertisement for Proposals	U.S. Department of Justice.	
		Information about the role of the ministry and the background of the project.	British Colombia	

Jim McCaffree (2005) reported that the supplier or vendor who doesn't manage the requirement properly will face added costs. In this regard, it is recommended to give the vendor all the material and information that may be used to implement and manage the project.

Based on the above common subdivisions, this element shall contain the following subdivisions:

- 1) Information about the Project.
- 2) Information about the client.
- 3) The invitation to bid must be completed and signed by the vendor and submitted with the proposal.

- 4) Proposal submission instructions.
- 5) Appointment of pre-bid tour
- 6) Short description of objectives and scope of the project's tasks.
- 7) Provision project title, RFP number, issue date, closing date and time, contact person's name, address of the client.
- 8) Official acknowledgment by the vendor.
- 9) Submitting the invitation to bid to the vendors by hand.
- 10) Sending the invitation to bid to wide range of vendors rather than shortlisted vendors.

2.11.1.2 Instructions for Bid Competition

MOMRA, (2010) developed a manual of operation and maintenance for city cleaning. It is clear they requested several conditions for accomplishing this requirement as shown in table 2-2.

- 1) Place and date of submission for the proposals.
- 2) Proposal language.
- 3) Proposal format.
- 4) Any inquiries about the bidding process.

The British of Colombia manual (2010) aimed in their manual to require the vendors to be straightforward from the beginning of the RFP process through the following important instructions:

- 1) Late proposals will not be accepted and will be returned to the vendor.
- 2) Proposals will not be evaluated if the owner considers the vendor to be in a conflict of interest about the project described in the RFP.
- 3) The owner has the right to terminate the contract negotiation with the successful vendor if the written contract is not reached within 30 days notified vendor.
- 4) The owner may adjust or withdraw a proposal prior to the closing date and time.
- 5) All proposals become irreversible upon closing time.
- 6) The owner is solely responsible for his own expenses in formulating a proposal.
- 7) Joint submissions and the use of sub-contractors are acceptable while the full responsibility will be on the successful vendor of the contract

Table 2-2 Managerial Elements (Instruction of Bid Competition)

No.	Category	Element	Author /Reference	The best suited
2	Managerial Elements	Instruction of Bid Competition	MOMRA	Instruction of Bid Competition
		Administrative Requirements	British Colombia	
		The date, time, and place for delivery of proposals.	U.S. Department of Justice.	
		Instructions to the bidders	City of Hyattsville	
		Site map	Nathan Huening	
		Proposal Delivery Instructions and Contact Information	Eric Leland & Jason Salter	

Based on the above common subdivisions, this element shall contain the following subdivisions:

- 1) Place and date of submission for the proposals.
- 2) Required Proposal language
- 3) Required Proposal format.
- 4) Any inquiries about the bidding process.
- 5) Rejection of any late proposals.
- 6) Rejection of proposals if there is a conflict of interest about the assigned project.
- 7) Termination of the contract if the written contract is not signed by the successful vendor within 30 days of notification.
- 8) The owner has the right to adjust or withdraw a proposal prior to the closing date and time.
- 9) All proposals become irreversible upon closing time.

- 10) The owner is solely responsible for his own expenses in formulating RFP.
- 11) Joint ventures and subcontractors under one vendor are acceptable with the applied vendor.

2.11.1.3 Organizational overview

This element will provide a short description of the clients' tasks, activities, and projects. This will ensure that the vendor is satisfied with the project needs. Eric Leland & Jason Salter and the Judicial Council of California gave another meaning which can be described as the purpose of this RFP.

Jim McCaffree (2005) described this element using the term 'Project Overview and Administrative Section'. He added that here is where you provide a general outline of your firm and this is the right place to designate the problem you want to solve with the project or service being requisitioned.

Porter Roth (2001) aimed to introduce this term as a project overview and administrative information section. The following subdivisions of this element are shown in table 2-3.

Table 2-3 Managerial Elements (Organizational Overview)

No	Category	Element	Author /Reference	The best suited
3	Managerial Elements	Organizational overview	Eric Leland & Jason Salter	Organizational Overview
		Address of the company or clients	Encyclopedia of management	
		Information about the role of the client and background of the project or requirement	British Colombia	
		Not mentioned as a standalone element.	U.S. Department of Justice.	
		Description of Facilities.	Nacho Aviance	
		Clients' Background	Nathan Huening	
		Not mentioned as a standalone element.	MOMRA	

- 1) Summary of problem statement, like an executive summary of the RFP management. *Porter Roth (2001).*
- 2) Information about the role of the clients and the background of the project or requirement. *(British of Colombia, (2013).)*
- 3) Short description of the clients, mission and projects which give the vendors understanding and focusing of clients' needs and requirements. (Eric Leland & Jason Salter, 2013).

Based on the above common subdivisions, this element shall contain the following subdivisions:

- 1) Summary of problem statement.
- 2) Information about the role of the clients and the background of the project or requirement.
- 3) Short description of the client's industry which gives the vendor's understanding of the clients' needs.

2.11.1.4 Applicable laws and regulations

This is described as codes and standards in some RFP, so it shall comply with all regulations of the client and the government laws as well. The World Bank, Washington, D.C., (2002) confirmed that the applicable laws and regulations shall govern the contracts and any other instruments described in the bid process, as well as any changes may happen from time to time.

British of Colombia, 2013 classified this element as:

1. Ensuring the recent general services agreements are used.
2. The flow of information to the vendors shall be consistent and updated.

MOMRA, (2010) approach with this element by using another term for contractor duties and obligations by identifying the duties and responsibilities of the vendors to be accomplished.

- 1) Provision of a copy of intended contract form to the vendors within the RFP documents. (*British of Colombia, 2013*).
- 2) The vendor shall be informed that the governing codes and standards of the country will be used as a reference for this RFP. (*City of Hyattsville , 2013*).
- 3) Including the RFP and the Successful Bidder's Proposal part of the Contract itself. (*Best Practice Request for Proposal Process, 2007*).
- 4) The applicable laws and regulations shall govern the contracts and any other instruments described in the bid process, as well as any changes may happen from time to time. *World Bank, Washington, D.C., (2002)*.

Table 2-4 Managerial Elements (Applicable Laws and Regulations)

No.	Category	Element	Author /Reference	The best suited
	Managerial Elements	Contract awarding	Best Practice Request for Proposal Process,2007)	Applicable laws and regulations
		Performance limits	Encyclopedia of management	
		Governing legislation	British Colombia	
		Not mentioned as a standalone element.	U.S. Department of Justice.	
		Codes and standards	City of Hyattsville	
		Contractor Duties and obligations	MOMRA	
		General Conditions of Contract	World Bank, Washington, D.C.	

Based on the above classification of this element, it is obvious that there is inconsistency in determining its subdivisions. The followings subdivisions can help in assessing the importance of this element:

- 1) Provision of a copy of intended contract form to the vendors.
- 2) The vendor shall be informed about the governing codes and standards of the country
- 3) Considering the RFP and the Successful Bidder's Proposal as a part of the Contract.

2.11.1.5 Pre-Bid Tour

Colorado State University stated that in this section by the Vendor pre-bid conference the following factors should be considered:

- 1) If a pre-bid conference is to be held, it should be held approximately 10 days after the requests have been mailed.
- 2) It is highly recommended that the pre-bid conference should be designated in the RFP as mandatory, in order that all vendors be given the same information.
- 3) A time limit is given to the vendors, after which no further questions will be considered.
- 4) An addendum, which gives answers to the questions, is posted on bids after all questions have been received.
- 5) The date and time of the pre-bid meeting should be placed on the front of the RFP and obviously positioned in another place in the document.
- 6) The vendors who attended, it shall provide a sign-in sheet at the pre-bid conference to document Proposals from vendors who do not attend compulsory pre-bid meetings cannot be accepted.
- 7) A formal date is established for receipt of vendor queries.

The City of Hyattsville (2013) described it as Pre-Bid Tour with the following factors to be considered:

- 1) prior to submitting a bid, each bidder shall have the chance to carefully inspect the project and fully understand the conditions that in any way may affect the work proposed.
- 2) Failure to inspect the sites will in no way relieve the successful contractor from the necessity of furnishing any materials or performing any labor necessary for the satisfactory completion of the work. (City of Hyattsville, 2013).

Table 2-5 Managerial Elements (Pre-Bid Tour)

No.	Category	Element	Author /Reference	The best suited
	Managerial Elements	Pre-Bid Tour	City of Hyattsville	Pre-Bid Tour
		Pre-Bid conference	Colorado state Manual	
		Not mentioned	British Colombia	
		Not mentioned	U.S. Department of Justice.	
		Not mentioned	Nacho Aviance	
		Not mentioned	MOMRA	
		Site visit &oral presentation	Porter –Roth	

The following subdivisions shall be assessed to seek its importance since there are several issues to be considered from all the mentioned issues.

- 1) It should be held approximately 10 days after the requests have been mailed .
- 2) The pre-bid conference should be designated in the RFP as mandatory.
- 3) Not accepting any further questions after a specific period of the pre-bid tour.
- 4) The date and time of the pre-bid meeting should be placed on the front of the RFP.
- 5) Providing a sign-in sheet at the pre-bid conference to document the vendors' attendance.
- 6) Pre-bid tour gives a chance for the vendors to inspect the project and fully understand the conditions.

2.11.1.6 Contracts and awarding

(Colorado State University, 2011) described this element by “Notification of Award and Protest Procedures” and Porter Roth, (2001) gave another term which is “Contract and license agreement section”.

Porter Roth (2001) identified several conditions of this element as applying to the vendors who apply for the bid:

1. The vendors shall accept the contracts during the bid submission otherwise it may be refused.
2. If there are any comments in the contract, they shall be discussed with the purchasing agent of the client prior to submission.

He added that there are many types of contract conditions which the client may request from the vendors such as:

- Purchase Agreement
- Maintenance Contract
- Warranty Period
- Software License Agreement
- Performance Bonds
- Payment Bonds
- Nondisclosure Agreements

The City of Hyattsville, (2013) produced a formal contract to be attached to the vendors that they should comply with. In addition, they classified the following points to be considered:

For any changes or modification to the contract conditions, the party who intend to modify or change must inform officially to the other party.

Colorado State University, (2011) had issued several conditions to the contracts that were assigned to the project during the bid process such as: the notification of Award and Protest Procedures should be placed, as well as the evaluation report which must be written and signed by the committee members., In addition, the committee will write the letter through the purchasing department to the successful and unsuccessful vendors, and the maximum time limit must not exceed seven (7) working days after the letters have been received by the successful vendor.

Each client mentioned above has his own conditions to the contracts and the way of awarding, so it is clear that most of those conditions are very important and need to be assessed to seek their importance during this study.

The following factors should be considered during the process of awarding the contract:

- 1) The notification of Award and Protest Procedures should be placed, as well as the evaluation report which must be written and signed by the committee members. (*Colorado State University, 2011*).
- 2) The committee will write the letter through the purchasing department to the successful vendor and unsuccessful vendors. (*Colorado State University, 2011*).
- 3) The maximum time limit must not exceed seven (7) working days after the letters will be received by the successful vendor. (*Colorado State University, 2011*).
- 4) The purchasing office should resolve any conflicts before they reach the letter writing phase. Conferences should be held with vendors who have inquiries about the result. (*Colorado State University, 2011*).
- 5) This element must include: the procurement contract, nondisclosure agreement, and other legal documents. *Porter Roth (2001)*.

Table 2-6 Managerial Elements (Contracts and Awarding)

No.	Category	Element	Author /Reference	The best suited
	Managerial Elements	Stipulated business requirements	Encyclopedia of management	Contracts and awarding
		Notification of Award and Protest Procedures	Colorado state manual	
		Not mentioned as a standalone element.	U.S. Department of Justice.	
		City contract.	City of Hyattsville	
		Contract and license agreement section	Porter Roth	

The following subdivisions shall be assessed to seek their importance since there are several issues to be considered from all the mentioned issues.

- 1) The notification of award and the evaluation report of the vendors' bids must be written and signed by the evaluation committee members.
- 2) Writing the notification letter by the client's purchasing department to the successful vendor and unsuccessful vendors.
- 3) Signing the contract within seven (7) working days after notifying the awarded vendor.
- 4) The client's purchasing office should resolve any conflicts regarding the RFP before sending the awarding letter.
- 5) Conferences should be held with vendors who have inquiries about the result.
- 6) Procurement contract.
- 7) Nondisclosure agreement.
- 8) Any specific legal documents.

2.11.1.7 Appendices

Jim McCaffree (2005) reported that the RFP recognized that in some cases there may not be space for other significant materials such as illustrations, strategies, or workflow diagrams. These items may be involved in the Appendices section. The Community Preservation Corporation, USA, reported that the Appendices shall contain:

- 1) Attachment 1: Applicant Survey
- 2) Attachment 2: Requirements of Federal and State
- 3) Principals
- 4) Organizational Structure
- 5) Certifications

Porter-Roth (2001) described the Appendices that include a large amount of appropriate material and information such as system illustrations, technical requirements studies, and outlines of project plan. Consequently, the RFP team uses the Appendices to produce thorough information that is too long to put it in the body of the RFP, so the best suited place is in an appendix. Below are examples of appendices:

- 1) Networks diagrams and studies.
- 2) Statistical information placed in spreadsheets.

- 3) Plans of communications systems.
- 4) Existing equipment lists.
- 5) The company standards.
- 6) Cautious development plan with dates.

MOMRA, (2010) described this element in the appendices and it contains the following subdivisions:

- 1) The curriculum vitae for the required staff.
- 2) Listed of the subcontractors if there are any.
- 3) Project structure of the vendor.
- 4) Time schedule of the project.
- 5) Statement of Service cost analysis

Based on the above illustrated subdivisions of the appendices which are described by the authors, it shows that there is inconsistency in identifying the accurate and suitable subdivisions. Therefore, the contents must be assessed to produce an required and accurate assessment tool as follows:

- 1) Intended project management plan.
- 2) Networks diagrams and studies.
- 3) Statistical information.
- 4) Plans of communications system.
- 5) Existing equipment lists.
- 6) The client standards.
- 7) Cautious development plan with dates.

- 8) Listed of the subcontractors if there.
- 9) Required certifications and approval from the vendor.
- 10) Existing project equipment plan.
- 11) Time schedule of the project.

Table 2-7 Managerial Elements (AppendicesAppendices) (12

No.	Category	Element	Author /Reference	The best suited
	Managerial Elements	Appendices.	Jim McCaffree	Appendices
		Not mentioned as a standalone element.	Encyclopedia of management	
		Appendices.	Colorado state manual	
		Appendices.	MOMRA	
		Amendments	City of Hyattsville	
		Appendices.	Porter Roth	
		Additional Information	Nacho Aviance	

2.11.2 Technical Requirements

Porter Roth (2001) described this element as to include the technical requirements of the vendors and sufficient information to enable them to write a firm proposal after understanding the issues.

Jim McCaffree (2005) confirmed that this section is to describe the technical requirements of the project or product, and should deliver all the probable information that the sellers require to respond to the RFP.

2.11.2.1 Scope of work and deliverables

It is described clearly in the City of Hyattsville 2013 manual the term of “Specific description of the services” as the U.S. Department of Justice (1998) described it. However, Nathan Huening, (2014) identified it as a “Scope of Work & Deliverables”. Lastly (MOMRA) classified it as “Project Purpose, Project deliverables and specifications” as indicated by Eric Leland & Jason Salter. Steve Davis, AIA classified this element as “a statement of scope”. The term “Description of Deliverables “ came through developing the RFP of The Community Preservation Corporation, USA.

The Colorado State University manual, identified the Scope of Work clearly as follows:

- 1) Provision of a clear statement of the work to be achieved, including a description of quantitative and qualitative regarding what is to be fitted out by the vendor.
- 2) Provision of a schedule of activities the vendor should met.
- 3) Provision of a schedule of the contract awarding.
- 4) Explanation of the vendor’s responsibilities.

Eric Leland & Jason Salter explained this element by giving the vendors more details which can help them to produce an accurate proposal, as well as more accurate cost estimates.

British Colombia Manual, (2016) aimed to introduce this element by its purpose of vendors to understand the current situation, as well as the intended program outcomes to develop their proposals.

The World Bank, Washington D.C. (2002) summarized this element by Giving the following information to the vendors:

- 1) Detailed descriptions of the services to be provided.
- 2) Dates for completion of various tasks,.
- 3) Place of performance for different tasks, specific tasks to be approved by the client.

Table 2-8 Technical Elements - Scope of Work and Deliverables

No.	Category	Element	Author /Reference	The best suited
1	Technical Elements	Scope of work	U.S. Department of Justice.	Scope of work and Deliverables.
		Contract scope and components of area scope.	MOMRA	
		Stipulated business requirements	Encyclopedia of management	
		Scope of Work & Deliverables	Nathan Huening	
		Project Deliverables and Specifications	Eric Leland & Jason Salter	
		Scope of work	Colorado state manual	
		Scope of the project and any restrictions on the scope of the work	British Colombia	

It is obvious that the authors confirmed their purpose by offering the required services and the dates for the accomplishments which can be summarized by the following subdivisions:

- 1) Provision of a clear statement of the work to be achieved.
- 2) Provision of a schedule of activities the vendor should met.
- 3) Provision of a schedule of the contract awarding.
- 4) Explanation of the vendor's responsibilities.
- 5) Vendors must understand the intended program outcomes to develop their proposals.

2.11.2.2 General conditions

In this element, The RFP must tell the vendors about the relation of the scope of work to the clients enduring package, and must contain a statement of the specific goals to be achieved by the project. The Community Preservation Corporation, USA described this element by the term “General Requirements” which determines the qualified vendors to participate in the program, so they will need to adhere to the contract provisions.

Table 2-9 Technical Elements (General Conditions)

No.	Category	Element	Author /Reference	The best suited
2	Technical Elements	General information	U.S. Department of Justice.	General conditions.
		General Requirements	Community Preservation Corporation	
		General conditions	City of Hyattsville	
		General Provisions	Nacho Aviance	

The City of Hyattsville (2013) described as “project conditions” and they developed instruction to this element for the Contractor through:

- 1) Cooperation from the owner to the vendors to perform and complete their proposals, by providing them with access to the work areas and any staging, offloading or preparation areas that are required. (City of Hyattsville, 2013).
- 2) Validity of the proposal from the date submitted.

- 3) Lowest cost proposal is not necessarily accepted.
- 4) Communication regarding the RFP should be through the assigned person written in the RFP document. (Nahco Aviance, 2011).

The general conditions element was described in a variety of requirements based on the client's requirements and the nature of the project, however, the most common subdivision of this element can be listed as follows:

- 1) Specific goals to be achieved by the project.
- 2) Identifying the qualified vendors to participate in the program.
- 3) Cooperation from the owner to the vendors by providing them with access to the work areas that are required.
- 4) Validity of the proposal from the date submitted.
- 5) Lowest cost proposal is not necessarily accepted.
- 6) Communication regarding the RFP should be through the assigned person written in the RFP document.

2.11.2.3 Sequencing and Scheduling

This element was described with unobvious terms such as, "Sequencing and Scheduling (City of Hyattsville, 2013), "schedule of events related to the RFP process", (U.S.

Department of Justice, 1998). While Eric Leland & Jason Salter described it as a “Proposal Evaluation Timeline.”

Table 2-10 Technical Elements (Sequencing and Scheduling)

No.	Category	Element	Author /Reference	The best suited
3	Technical Elements	Submission deadlines	Encyclopedia of management	Sequencing and Scheduling
		Proposal Evaluation Timeline	Eric Leland & Jason Salter	
		Format & Proposal Timeline	Nathan Huening	
		Schedule of events related to the RFP process.	U.S. Department of Justice.	
		Sequencing and Scheduling	City of Hyattsville	

This element has a distinct explanation in each analyzed RFP, so some of them classified it separately by another description while others came to describe it as independent element.

From a technical point of view, it should be receiving special attention through assessment of its purpose to obtain its importance in the bidding process. This can be achieved through the following points:

- 1) The successful vendor shall coordinate with the owner to sign the attached contract within (10) days of acceptance.
- 2) Arrangement of a schedule of services set forth by the client.
- 3) Submission deadlines.
- 4) Proposal Evaluation Timeline.

- 5) A schedule of events related to the RFP process.

2.11.2.4 Vendor Qualifications and References Section

It is described as a “Curriculum vitae for Supervision staff”. While British Colombia Manual gave another term, which is “expectations, such as a vendors’ experience and qualifications.”

Table 2-11 Technical Elements (Vendor Qualifications and References Section)

No.	Category	Element	Author /Reference	The best suited
4	Technical Elements	Vendor Qualifications and References Section	Jim McCaffree	Vendor Qualifications and References Section
		Curriculum vitae for Supervision staff.	MOMRA	
		Expectations, such as a vendors’ experience and qualifications;	British Colombia	
		Qualifications of workers	City of Hyattsville	
		Supplier Qualification and References.	Porter Roth	
		Manpower and equipment of vendor.	MOMRA	

There are several considerations for accomplishing this element:

- 1) Jim McCaffree (2005) aimed to determine the contents of this element, so the vendor should deliver: his history; skills; evidence that he has sufficient skills and resources to accomplish the contract and references of previous contracts.
- 2) Porter Roth (2001) gave another point of view that the vendors must provide any information which is applicable while not compulsory or demanded in the RFP.

MOMRA (2010) categorized this element by providing the manpower and equipment of the vendor while City of Hyattsville (2013) confirmed the importance of providing the evidence of workers' qualifications.

Based on the above explanation, it is clearly identified in this section that this includes the vendor ability to provide:

The vendor firm's history in the field of the client project.

Evidence of ability to provide sufficient skills and resources to accomplish the contract.

References of previous contracts.

The vendor can provide information which is applicable, while not compulsory in the RFP.

2.11.2.5 Proposal Submission

This is the element was concentrated on most out of all the references identified by the same term except by Eric Leland & Jason Salter, (2013) who described it as “Proposal Delivery Instructions and Contact Information”, as well as The Community Preservation Corporation, USA who identified it as “The Submission of Applications”.

Table 2-12 Technical Elements (Proposal Submission)

No.	Category	Element	Author /Reference	The best suited
5	Technical Elements	Submission of proposals	City of Hyattsville	Proposal Submission
		Contractor bid cost and schedules of prices, analysis method.	MOMRA	
		The Submission of Applications.	The Community Preservation Corporation	
		Proposal Format	Eric Leland & Jason Salter	
		Specific description of the expected proposal format for responses	U.S. Department of Justice.	

MOMRA (2010) requested in their manual to include the following items in this element such as contractor bid cost, schedules of prices, analysis method.

The City of Hyattsville (2013) determined several instructions under this element as follows:

- 1) The dates of proposal submission.

- 2) The required period prior of proposal validity.
- 3) The client's rights to negotiate, accept or refuse the proposal.

The Community Preservation Corporation, USA identified the following factors to be considered during the RFP submission:

- 1) Vendors must submit their proposals on or before the submission deadline date in accordance with the directions and additions contained in the RFP.
- 2) Vendors must primarily meet the requirements outlined to be considered for participation in the program.
- 3) The committee will evaluate and determine whether the vendors accomplished the requirements.

The following sub elements should be assessed to prove their importance in proposal submission as follows:

1. The dates of proposal submission.
2. The required period of proposal validity.
3. The client's rights to negotiate, accept or refuse the proposal.
4. Vendors must submit their proposals on or before the submission deadline date.
5. Vendors must primarily meet the requirements outlined to be considered for participation in the project.

2.11.2.6 Proposal Evaluation & selection criteria

There are two types of evaluation and selection criteria assigned by Frances C. Wilkinson and Sever Bordeianu (1997):

- 1) Technical evaluation.
- 2) Financial evaluation.

The Colorado State University manual added the following issues to be considered during the evaluation process:

- 1) Importance of communicating references and evaluating and vendor responses.
- 2) The evaluation criteria must be linked to the specifications and requirements which are described clearly in the RFP. Weight factors may be involved in the request for proposals.
- 3) RFP must classify all important factors, giving their relative importance, including price.
- 4) The general information about the criteria and the evaluation technique to be used must be part of the RFP.

Table 2-13 Technical Elements (Proposal Evaluation and Selection Criteria)

No.	Category	Element	Author /Reference	The best suited
6	Technical Elements	Description of the evaluation factors	U.S. Department of Justice.	Proposal Evaluation & Selection Criteria
		Monitoring and evaluation	MOMRA	
		Evaluation criteria	Encyclopedia of management	
		Criteria for Selection	Nathan Huening	
		Proposal Evaluation	Eric Leland & Jason Salter	
		Proposal Evaluation	Nacho Aviance	
		Areas for evaluation	Porter- Roth	

Porter-Roth, 2001 added the following examples of suitable areas for evaluation:

- Technical requirements.
- Management requirements.
- Price.
- References.
- Qualifications/similar projects.
- Site visits/oral presentations.
- Product tests or demonstrations.
- Overall response to the RFP.
- Ability to work with the supplier's team.

The British Columbia Manual classified the evaluation criteria as one of the most important components of an RFP document as they define how proposals will be assessed and what makes one proposal better than another. There are two types of criteria:

1) **Mandatory criteria which includes:**

- Proposal must include evidence that at least one member of the project team is a registered Professional Engineer.
- The proposal must be received at the closing location by the specified closing date and time.
- The qualifications of personnel on the vendor project team must be suitable for the roles proposed.
- The vendors must be knowledgeable about government policies and practices.

2) **Desirable criteria which includes:** price, qualifications and experience, and the proposed solution or approach.

All of the above description of the proposal evaluation and criteria indicates the contradiction in identifying this element clearly, therefore these following sub elements must be assessed to evaluate its importance as follows:

- 1- Importance of communicating references and evaluating vendor responses.

- 2- The evaluation criteria must be linked to the specifications and requirements in the RFP.
- 3- Weight factors can be involved in the request for proposals.
- 4- RFP must classify all important factors, giving their relative importance including the Price.
- 5- The general information about the criteria and the evaluation technique to be used must be part of the RFP.

2.11.3 Financial Elements.

2.11.3.1 Pricing Section

B. Schatz and D. J. Graves reported that the clients are asking the vendors to comprise corporate financial information along with their RFP replies. There are numerous issues to consider.

1. The purpose and target of the data in evaluating.
2. The outcome that is aimed for.

Frances C. Wilkinson and Sever Bordeianu (1997), reported that the pricing is obviously not the only the factor to be measured in the RFP process but it extends to the budget and the size and the function of the product.

Jim McCaffree (2005) reported that the pricing section should direct vendors to break down the price of the project into components, creating price lists for each component. This will be easier to distinguish the variance between bids.

Table 2-14 Financial Elements (Pricing Section)

No.	Category	Element	Author /Reference	The best suited
1	Financial Elements	Not mentioned as standalone.	U.S. Department of Justice.	Pricing section
		Schedules of prices	MOMRA	
		Price quotations	Encyclopedia of management	
		Budget	Nathan Huening	
		Payments	City of Hyattsville	
		Pricing section	Porter- Roth	

The City of Hyattsville (2013) reported that the contractor shall apply the payment/invoice to the city, for services monthly. The city shall give the contractor frequently programmed payments for the contractor's maintenance services in specific amounts.

The Colorado State University manual classified this section by several recommendations to avoid any missing information. They presented the following recommendations:

- 1) The vendor must deliver cost and pricing data perfectly to confirm that there are no other hidden costs or confusions on costs and prices.

- 2) The vendor must deliver all the actual expenses of performing a contract. Flexible, fixed costs for the accomplishment a contract. All the variable, fixed, semi-variable, direct, and indirect costs must be inspected to govern if they are reasonable and realistic costs.

Porter Roth (2001) clearly and briefly described this element by requiring the vendors to provide pricing data and information required to perform the task successfully.

The previous sub elements of pricing section distract the vendor from concentrating on how to give the best price for the scope, so it can be classified consistently to produce the required and accurate response from the vendors as follows:

- 1) The vendor shall provide the required pricing of each item.
- 2) Pricing section concentrates on the price, size, and the function of the product.
- 3) The vendor must submit all his expenses in this section to avoid any missed or hidden cost.
- 4) Requires the vendors to provide the pricing data to perform the tasks.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The main objective of this study is to assess and evaluate the main elements that bound and determine the whole skeleton of RFP in the operation and maintenance of high rise buildings in Saudi Arabia to develop an assessment tool for evaluating all the RFPs in the buildings industry to eliminate the conflicts prior to a proposal's submission.

This chapter offers all the steps achieved to accomplish the research objectives.

The first step was to obtain the general knowledge and information through a review of the literature to identify the main elements of RFP and the factors affecting this solicitation to achieve the strategic goals of clients.

The second step was to obtain the local experience from the major selected experts in the construction industry through distributing a structured survey which was based on the gained elements and sub elements from the literature review in the second chapter.

The third step was to create an assessment tool for evaluating the RFP based on the analyzed survey.

3.2 literature Review.

The review has highlighted on existing researches of request for proposals' processes and documents. In addition, there were three global cases that had been studied and analyzed to get the main factors that contribute to getting successful proposals without mistakes or interrupted information.

The literature was collected and carefully organized through databases searches with these key words: Request for proposals, operation and maintenance, business solutions, RFP elements, contracts conditions, high rise buildings and motivational influences. The selected literature includes: popular magazines, books, journals, articles, approved papers and certified websites.

3.3 Pilot Study of the Questionnaire Form.

Prior to the final circulation of the questionnaire survey, a pilot testing was conducted by five maintenance experts who are working in the Saudi Arabia Eastern Province in high rise buildings for the purposes of:

- a. Investigation of the questions suitability.
- b. Incorporating additional possible RFP Elements.
- c. Assessing the significance of these RFP Elements.

Summary

The feedback that was collected from the experts when they were asked to evaluate the questionnaire as per the mentioned points in section 3.3:

1. In managerial elements, at “invitation to bid section”, the client shall have a portal through the web to invite, upload the RFP documents, receive inquiries from the vendors and upload the proposals by the vendors.
2. In technical elements, at “Proposal submission section” alternatives of solutions can be submitted inside the proposal in separate section supported by all the required evidence such as the availability of materials and the best competitive price.
3. In technical elements “General conditions of the public works issued should be a part of the RFP”.
4. In financial elements, at “Pricing section” it is recommended to ask for detailed pricing for each required item instead of the lump sum pricing

3.4 Development of Questionnaire Survey

The purpose of this survey is to identify these measurable managerial, technical, and financial categories and assess their significance by operation and maintenance experts.

The structure of the survey questionnaire is divided in two parts which include:

Part One - Respondent Information.

Part Two: Development of an assessment tool for operation and maintenance RFP
in high rise buildings in Saudi Arabia.

3.5 Distribution of the Tested Questionnaire

At this step, the tested survey was circulated to operation and maintenance experts in the eastern province in the cities of Khobar, Dammam, and Dhahran to evaluate the importance of the predictable managerial, technical, and financial elements. The respondents were requested to spot their supposed relative level of importance for each of the identified through selection one of five assessment terms; “Extremely important”, “Important”, “Moderately important”, “Not important” and “Extremely not important .”

3.6 Identification of the Sample Size

Per (Kish, 1995) the equations have been used to calculate the sample size as follows:

$$no = (p*q)/v^2$$

$$n = no / [1 + (no / N)]$$

Where: no: First assessment of size sample

p: The percentage of the representative being measured in the target population.

q : Completion of p or 1-p.

V: The maximum ratio of allowed standard error (10%).

N: The population size.

n: The sample size.

Note: to maximize the sample, both p and q are each set at 0.5.

The population size (N) is **229** as obtained from Dammam municipality in Saudi Arabia in the Eastern Province. The sample sizes are calculated as follows:

$$\text{Sample size (n)} = 25 / [1 + (25/229)] = 25.$$

3.7 Data analysis

This part presents an analysis of the received data from 55 experts who completed the questionnaire survey. The sample size which was determined by using equations is 25 as explained in section 3.6 of this chapter. However, the distribution survey was 65 and 55 were received and filled by operation and maintenance's experts who are working in the Eastern Province of Saudi Arabia in different organizations that are related to the operation and maintenance of high rise buildings. There were 10 respondents who answered that they are not familiar with RFPs processes. Their responses were not included in the survey analysis as shown in the figure 3-1.

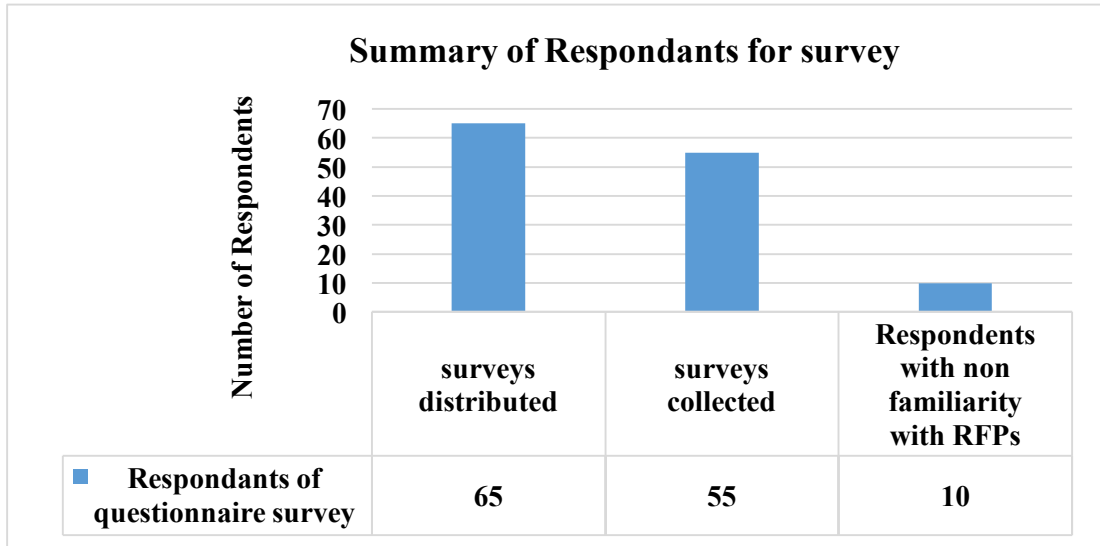


Figure 3-1 Summary of the Respondents

3.7.1 Part One: Respondents' Information

This part presents the general information of the respondents which include their position, the experience that they have in this field, the nature of their organization, the types of projects that they have mainly worked on and the number of employees that their organization has. Analysis of the received data was carried out using simple descriptive statistical techniques including simple graphics, percentages, and simple summaries of the findings.

Respondent Data.

These questions were optional for respondents. Therefore, about half of them submitted their data in various details such as the company name, email address and the company address. This part constitutes strong value to the study when there are contact details to be used for further inquiries. The list of targeted organizations during questionnaire's distribution was listed in Appendix 2.

Nature of the Organizations.

The respondents were asked to determine the nature of the organizations that they mainly worked in. The results indicated that 96% of them worked in private sector organizations as shown in Figure 3-2.

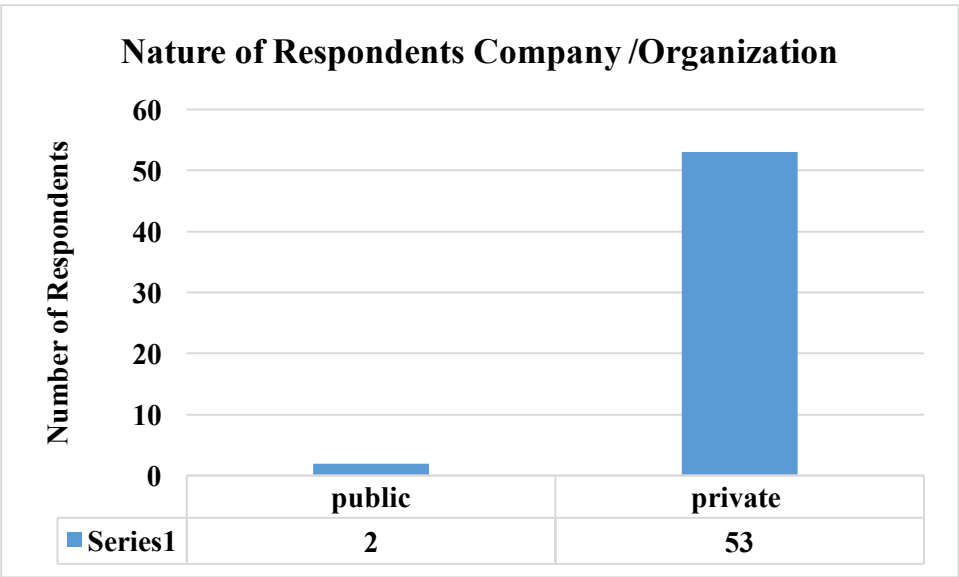


Figure 3-2 Nature of The Respondent's Organizations.

Number of Employees in the Organization

The experts were asked to determine the number of employees in their organizations that they mainly worked in. The results indicated that 37 (about 67.3%) of respondents have 1-50 employees in their organizations, 16 (about 29.2%) of respondents have 50- 100 employees, 2 (about 3.5%) of them have 100- 150 employees while there is no respondent who has more than 150 employees as shown in Figure 3-3.

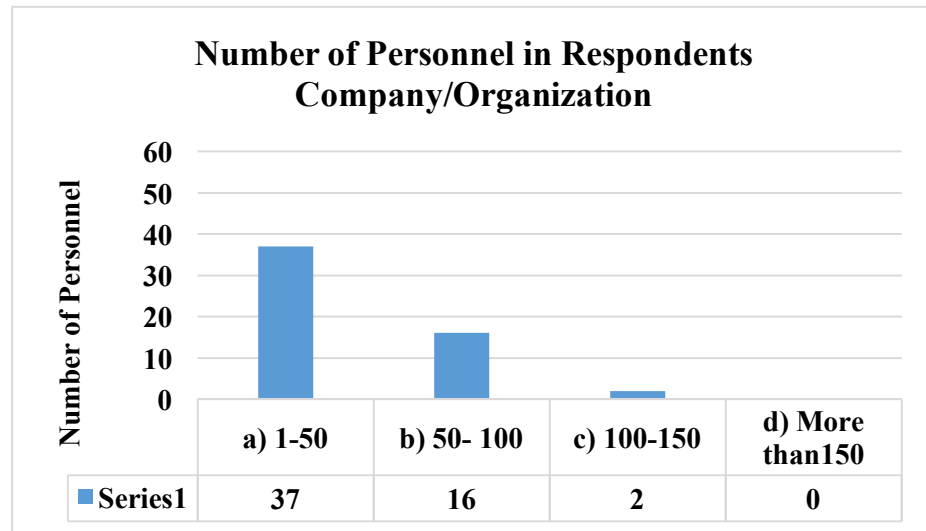


Figure 3-3 Number of Employees in the Maintenance Expert's Organization.

Respondents' Roles in their Organization

The operation and maintenance experts were asked to identify their roles in their organizations. It was found that 33 (about 60%) of respondents are working as engineers or architects, 13 (about 24%) of respondents as maintenance managers, and 9 (about 16%) of them as facilities managers as shown in Figure 3-4.

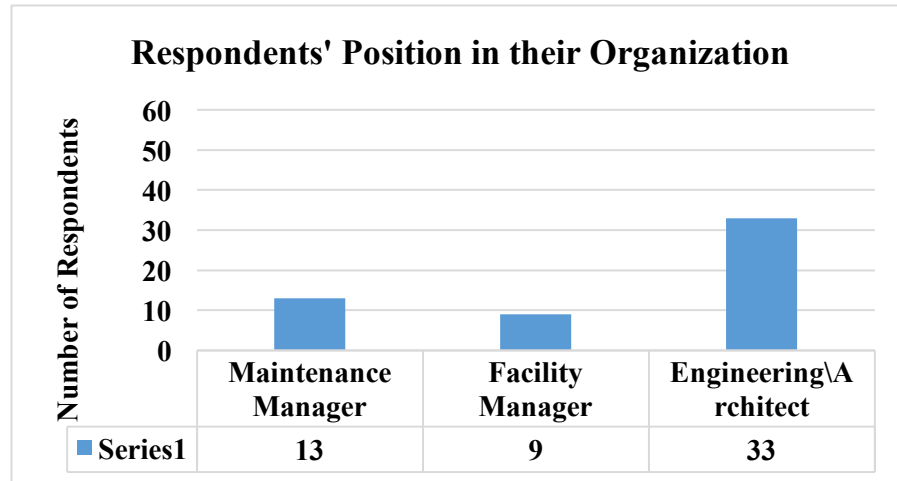


Figure 3-4 Respondents' Roles in their Organizations

Respondents' Experience

The experts were asked to determine the years of their experience which were classified into four categories: less than five years, five to ten years, ten to twenty years, twenty to thirty years, more than thirty years. The results showed that 30 of the respondents, which consists of 55% of them, have 10-20 years' experience, 12 of the respondents, which consists of 22%, had less than 10 years' experience, 9 of the respondents, which consists of 16% had 20-30 years, and 4 of the respondents, which consists of 7%, had over 30 years' experience as shown in Figure 3-5

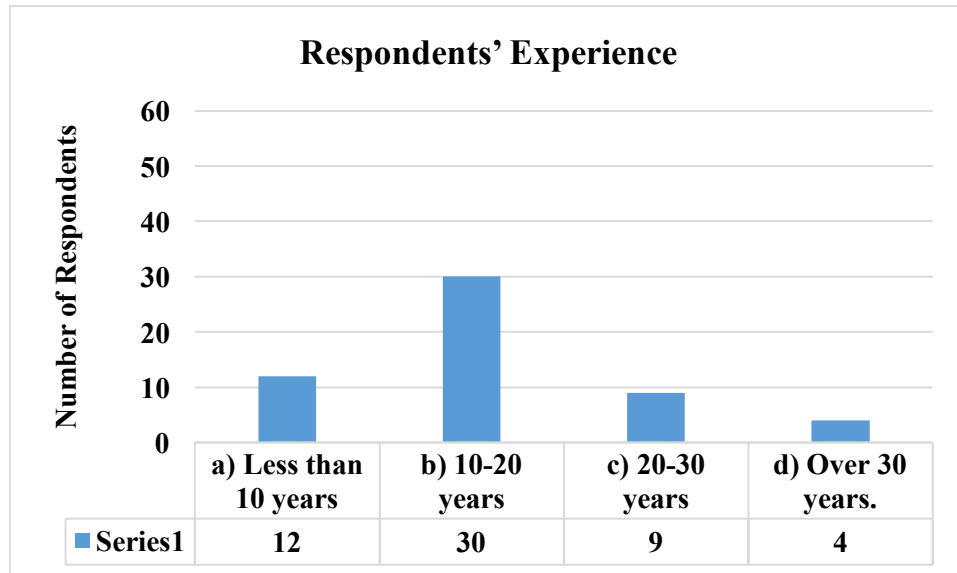


Figure 3-5 Respondent's Experience

Kind of Projects Carried out by the Respondents

The experts were asked to determine the kind of projects that they mainly worked on. Project types which had been determined include high rise educational, offices, residential, and commercial buildings. The results shown in figure 3-6 indicated that 40 (about 73%) of respondents worked on residential projects, 30 (about 55%) of respondents on the commercial projects, 20 (about 36%) of respondents on educational projects and 18 (about 33%) of respondents on office buildings.

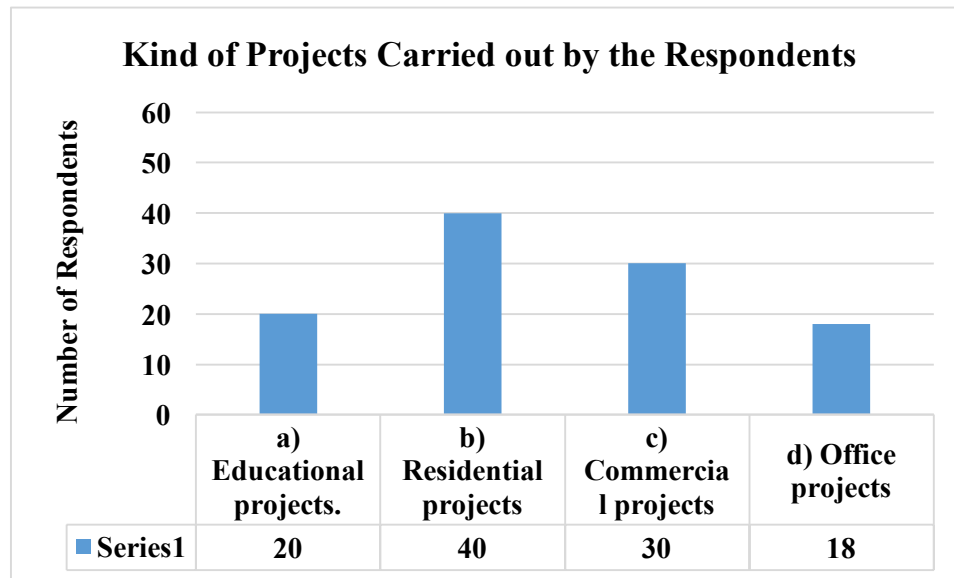


Figure 3-6 Kind of Projects Carried out by the Respondents

Participation in Developing RFP Documents

It is clearly stated here in this question whether the respondent has been involved in the RFP process during his work or not. Therefore, the respondents who answered by “No” will not be requested to complete the questionnaire because they do not have experience to evaluate the elements and its categories. The figure 3-7 illustrates that 45 (about 82%) of respondents answer with “Yes” while 10 (about 18%) of them answered with “No” thus, the responses with “No” will not be included in the remaining survey analysis.

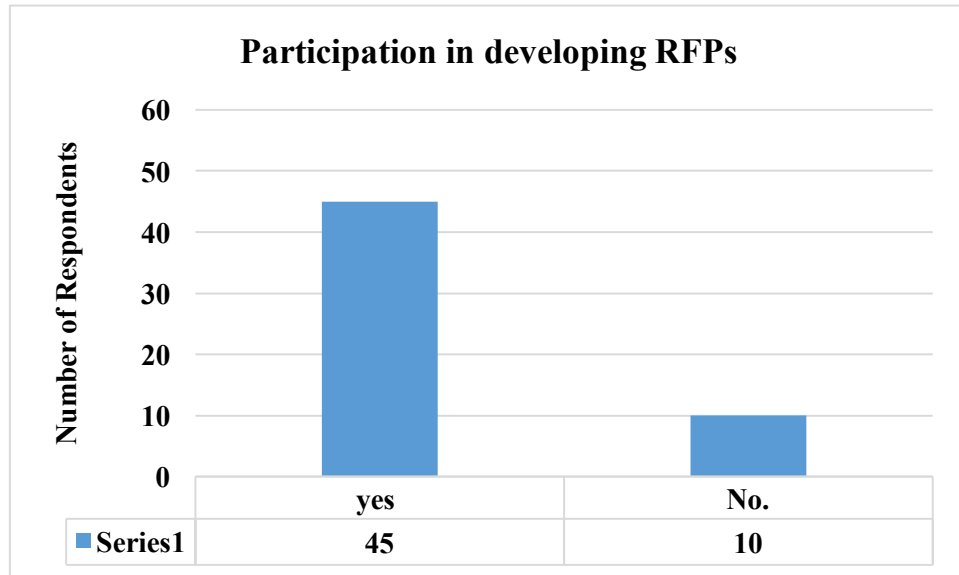


Figure 3-7 Participation in developing RFP documents.

Years of experience of respondents in developing the RFP process.

The experts were asked to determine their years of experience in developing the RFP process. The results show 30 (about 66.7%) of the respondents' experience was less than 10 years, 10 (about 22.2%) of respondents' experience was 10-20 years and 5 (about 11.1%) of them have 20-30 years of experience in developing the RFP process as shown in figure 3-8.

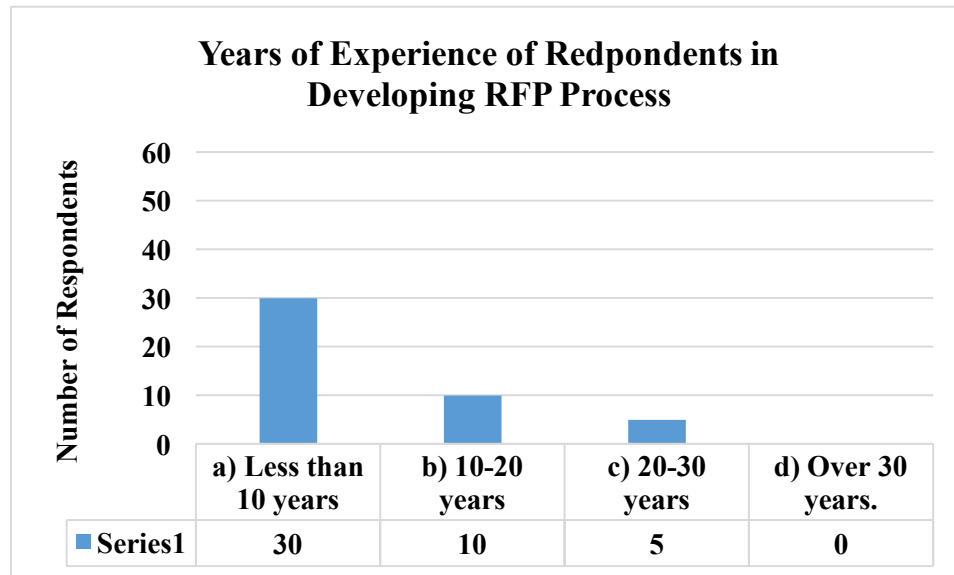


Figure 3-8 Years of Respondents' Experience in Developing The RFP Process

Number of RFPs that Respondents Participated in.

This specific question tests the proficiency and the amount of RFPs that the respondents worked on. The results showed 34 (about 76%) of respondents participated in 1-5 RFPs while there are 8 (about 17.6%) and 3 (about 6.6%) of respondents who participated in 5-10 and 10-15 RFPs respectively, and there is no respondent who participated in more than 15 RFPs. as shown in figure 3-9.

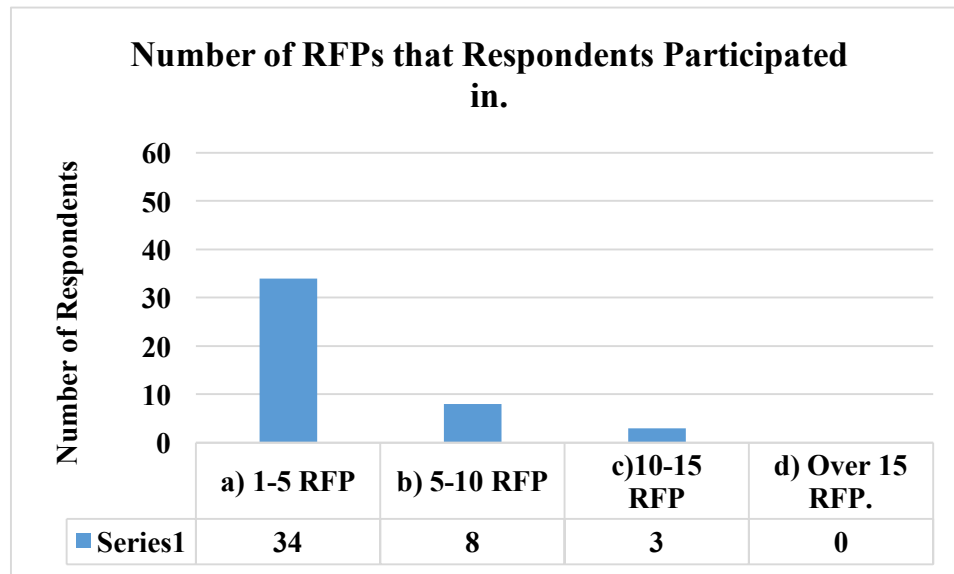


Figure 3-9 Number of RFPs that respondents participated in

3.7.2 Part Two: an Assessment Tool for RFP Elements

This is an assessment tool which includes all the conditions of the selection and its importance in preparing and issuing the RFP as indicated in Tables 3-2: 3-15.

The questionnaire shown in appendix I presents the main elements of the RFP and the subdivisions that may be considered in developing the RFP main elements.

The respondents who have an experience in developing RFP Documents were 45 (about 82%). They were requested to assess the importance of the main elements and its subcategories. Based on the responses, each element of RFP was assigned an importance index using the following formula (Dominowski 1980):

$$\text{importance index} = \text{Where: } = \frac{\sum_{i=0}^4 a_i x_i}{4 \sum_{i=0}^4 x_i} \times 100\%$$

i = response category, $i = 1, 2, 3, 4, 5$

a_i = responses given weight, $i = 1, 2, 3, 4, 5$

x_i = represents frequency of i , $i = 1, 2, 3, 4, 5$

x_0 = frequency of “Extremely important” response corresponding to $a_0 = 5$

x_1 = frequency of “Important” response corresponding to $a_1 = 4$

x_2 = frequency of “Moderately important” response corresponding to $a_2 = 3$

x_3 = frequency of “Not important” response corresponding to $a_3 = 2$

x_4 = frequency of “Extremely not important” response corresponding to $a_4 = 1$

The significance index was categorized based on the scale depicted below (Hassanain and Juaim 2011):

- If the index value is below 12.5%, then the factor is “Extremely not important” (ENI)
- If the index value is between 12.5% and 37.5%, then the factor has “Not important”. (NI)
- If the index value is between 37.5% and 62.5, then the factor has “Moderately important”. (MI)
- If the index value is between 62.5% and 87.5%, then the factor has “Important”. (I)
- If the index value is above 87.5%, then the factor has “Extremely important”. (EI)

3.7.2.1 Development of an Assessment Tool for RFP Elements in High Rise Buildings in Saudi Arabia.

I. An Assessment Tool for Main Elements of RFP (Managerial Elements)

I.1 Invitation to Bid

This is an assessment tool which includes ten categories as listed in table 3-1 which enhance all the essential contents of this element such as: information about the project and client, instructions for bidders about the proposal submission and ways of submitting, receiving and visiting the site.

The mean response from 45 experts who completed the questionnaire survey indicated that this main element was evaluated to be “Important” with an overall average of important index of 79.14 % for this criterion as indicated in Table 3-1.

The sub elements had different values of importance index. Thus the mean response varies from “Extremely important” for items such as: Information about the Project and Official acknowledgment by the vendor while the remaining sub elements were evaluated to be “Important” as shown in the table 3-1.

Table 3-1 Rate of Importance for RFP Elements- Managerial Category

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
I	Managerial Elements									
I.1	Invitation to bid	Overall average					3.96	79.14	I	5
1	Information about the Project.	23	20	1	0	0	4.50	90.00	EI	2
2	Information about the client.	10	25	8	1	0	4.00	80.00	I	5
3	The invitation to bid must be completed and signed by the vendor and submitted with the proposal.	8	17	18	2	0	3.69	73.78	I	6
4	Proposal submission instructions.	22	14	7	2	0	4.24	84.89	I	4
5	Appointment of Pre-bid tour	8	19	14	3	1	3.67	73.33	I	8
6	Short description of objectives and scope of the project's tasks.	23	10	10	1	0	4.25	85.00	I	3
7	Provision Project title, RFP number, issue date closing date and time, contact person's name, address, address of the client.	5	16	16	8	0	3.40	68.00	I	10
8	Official acknowledgment by the vendor	30	12	2	1	0	4.58	91.56	EI	1
9	Submitting the invitation to bid to the vendors by hand.	10	12	20	1	2	3.60	72.00	I	9
10	Sending the invitation to bid to wide range of vendors rather than shortlisted vendors.	9	14	20	1	1	3.64	72.89	I	7

I.2 Instruction for Bid Competition

This is the second main element of managerial category which includes eleven sub elements as listed in table 3-2 which enhance all the important conditions and instructions for bidders to comply with client regulations and requirements.

The mean response from 45 experts who completed the questionnaire survey indicated that this main element was evaluated to be “Important” with an overall average of important index of 84.15 % for this criterion as indicated in Table 3-2.

The sub elements had different values of importance index. Thus the mean response varies from “Extremely important” for items such as: “Place and date of submission for the proposals”, “Rejection of any late proposals” and “Required Proposal Format”, “Termination of the contract if the written contract not signed by the successful vendor within 30 days of notification”, “The owner has the rights to adjust or withdraw a proposal prior to the closing date and time”. All proposals become irreversible upon closing time” and “Joint ventures and subcontractors under one vendor are acceptable with the applied vendor”. The sub elements “Required Proposal language” and “The owner is solely responsible for his own expenses in formulating RFP” were evaluated to be “Important” and the item “Any inquiries about the bidding process” was evaluated to be “Moderately Important” as shown in the table 3.2.

Table 3-2 Rate of Importance for RFP Elements- Managerial Category (Instruction of Bid Competition)

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
I	Managerial Elements									
I.2	Instruction of bid competition	Overall average					4.21	84.15	I	3
1	Place and date of submission for the proposals.	33	10	1	1	0	4.67	93.33	EI	2
2	Required Proposal language	18	6	16	3	2	3.78	75.56	I	9
3	Required Proposal format.	28	15	2	0	0	4.58	91.56	EI	3
4	Any inquiries about the bidding process.	0	0	15	3	0	2.83	56.67	MI	11
5	Rejection of any late proposals.	25	18	2	0	0	4.51	90.22	EI	7
6	Rejection of Proposals if there is a conflict of interest about the assigned project.	35	10	0	0	0	4.78	95.56	EI	1
7	Termination of the contract if the written contract not signed by the successful vendor within 30 days of notification.	20	13	10	1	0	4.18	83.64	I	8
8	The owner has the rights to adjust or withdraw a proposal prior to the closing date and time.	30	11	3	1	0	4.56	91.11	EI	4
9	All proposals become irreversible upon closing time.	30	12	1	1	1	4.53	90.67	EI	6
10	The owner is solely responsible for his own expenses in formulating RFP.	8	9	18	9	1	3.31	66.22	I	10
11	Joint ventures under one vendor are acceptable with the applied vendor.	28	15	1	1	0	4.56	91.11	EI	5

I.3 Organizational Overview

This main element includes three sub elements, namely: summary of problem statement, information about the role of the clients and the background of the project or requirement and a short description of the client's industry and which give the vendors understanding of clients' needs. The mean response from 45 experts who completed the questionnaire survey indicated that this element was evaluated to be "Important" with an overall average of important index of 77.27 % for this criterion as indicated in Table 3-3.

Table 3-3 Rate of Importance for RFP Elements- Managerial Category

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI	E(X)	II%	MR	Rank
I	Managerial Elements									
I.3	Organizational overview	Overall average					3.86	77.27	I	7
1	Summary of problem statement.	17	25	2	1	0	4.29	85.78	I	1
2	Information about the role of the clients and the background of the project or requirement	8	17	19	1	0	3.71	74.22	I	2
3	Short description of the client's industry and which give the vendors understanding of clients' needs.	11	11	17	3	2	3.59	71.82	I	3

The sub elements had different values of importance index. Thus the mean response was evaluated to be “Important” for items such as: “Summary of problem statement”, “Information about the role of the clients and the background of the project or requirement” and “Short description of the client’s industry and which give the vendors understanding of clients’ needs”, as shown in the table 3.3.

I.4 Applicable Laws and Regulations

This main element includes three sub elements namely: provision of a copy of the intended contract form to the vendors, the vendor shall be informed that the governing codes and standards of the country and Considering the RFP and the Successful Bidder’s Proposal as a part of the contract which enhance all the important conditions and instructions for bidders to comply with client regulations.

The mean response from 45 experts who completed the questionnaire survey indicated that these elements were evaluated to be “ExtremelyImportant” with an overall average of important index of 92.15 % for this criterion as indicated in Table 3-4.

The sub elements were evaluated to be “Extremely important” for the items as shown in the table 3.4.

Table 3-4 Rate of Importance for RFP Elements- Managerial Category (Applicable Laws and Regulations

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
I	Managerial Elements									
I.4	Applicable laws and regulations	Overall average					4.61	92.15	EI	1
1	Provision of a copy of intended contract form to the vendors.	30	12	3	0	0	4.60	92.00	EI	2
2	The vendor shall be informed that the governing codes and standards of the country	30	11	4	0	0	4.57	91.55	EI	3
3	Considering the RFP and the Successful Bidder's Proposal as a part of the Contract.	32	10	2	1	0	4.62	92.44	EI	1

I.5 Pre-bid Tour

This main element includes six categories which had different values of importance index.

The mean response from 45 experts who completed the questionnaire survey indicated that this element was evaluated to be “Important” with an overall average of important index of 78.79 % for this criterion as indicated in Table 3-5.

Table 3-5 Rate of Importance for RFP Elements- Managerial Category (Pre-Bid Tour

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
I	Managerial Elements									
I.5	Pre-bid tour	Overall average					3.94	78.79	I	6
1	It should be held approximately 10 days after the requests have been mailed.	19	10	16	0	0	4.07	81.33	I	4
2	The pre-bid conference should be designated in the RFP as mandatory.	24	16	2	2	1	4.33	86.67	I	2
3	Not accepting any further questions after a specific period of pre-bid tour.	5	5	11	14	10	2.58	51.56	MI	6
4	The date and time of the pre-bid meeting should be placed on the front of the RFP.	9	16	18	2	0	3.71	74.22	I	5
5	Providing sign-in sheet at the pre-bid conference to document the vendors' attendance.	22	13	10	0	0	4.27	85.33	I	3
6	Pre-bid tour gives the chance to the vendors to inspect the Project and fully understand the conditions.	32	10	2	0	0	4.68	93.64	EI	1

The mean response for the sub elements were perceived to be “Extremely important” for items such as: “Pre-bid tour gives the chance to the vendors to inspect the Project and fully understand the conditions”. For the rest of them such as: It should be held

approximately 10 days after the requests have been mailed”, “the pre-bid conference should be designated in the RFP as mandatory”, “The date and time of the pre-bid meeting should be placed on the front of the RFP”, and “Providing sign-in sheet at the pre-bid conference to document the vendors’ attendance”. While the item of “not accepting any further questions after a specific period of pre-bid tour” was evaluated to be “Moderately Important” as shown in the table 3.5.

I.6 Contracts and awarding

This main element includes eight sub elements which had different values of importance index. The mean response from the 45 experts who completed the questionnaire survey indicated that this main element was evaluated to be “Important” with an overall average of important index of 79.83 % for this criterion as indicated in Table 3-6.

Thus the mean response for sub elements vary from “Extremely important” for items such as: “Any specific legal documents.”, “Nondisclosure agreement”. The items namely “The notification of award and the evaluation report of the vendors’ bids must be written and signed by the evaluation committee members”, “Conferences should be held with vendors who have inquiries about the result”, “Procurement contract”, “The client’s purchasing office should resolve any conflicts regarding RFP before sending the awarding letter” and “Writing the notification letter by the client’s purchasing

department to the successful vendor and unsuccessful vendors”. The item of “Signing the contract within seven (7) working days after notifying the awarded vendor” was evaluated to be “Moderately Important” as shown in the table 3.6.

Table 3-6 Rate of Importance for RFP Elements- Managerial Category (Contracts and Awarding)

	An Assessment Tool for main elements of RFP.	EI	I	MI	NI	ENI	E(X)	II%	MR	Rank
I	Managerial Elements									
I.6	Contracts and awarding	Overall average					3.99	79.83	I	4
1	The notification of award and the evaluation report of the vendors' bids must be written and signed by the evaluation committee members.	18	18	8	0	0	4.23	84.55	I	3
2	Writing the notification letter by the client's purchasing department to the successful vendor and unsuccessful vendors.	3	20	20	2	0	3.53	70.67	I	7
3	Signing the contract within seven (7) working days after notifying the awarded vendor.	3	3	20	17	2	2.73	54.67	MI	8
4	The client's purchasing office should resolve any conflicts regarding RFP.	15	15	11	3	1	3.89	77.78	I	6
5	Conferences should be held with vendors who have inquiries about the result.	18	18	9	0	0	4.20	84.00	I	4
6	Procurement contract.	19	11	14	1	0	4.07	81.33	I	5
7	Nondisclosure agreement	30	13	2	0	0	4.62	92.44	EI	2

I.7 Appendices

This main element includes eleven sub elements that had different values of importance index. The mean response from 45 experts who completed the questionnaire survey indicated that this element was evaluated to be “Important” with an overall average of important index of 84.52 % for this criterion as indicated in Table 3-7.

The mean response of sub elements varies from “Extremely important” for items such as: “Time schedule of the project”, “Required certifications and approval from the vendor”, “The client standards”, “Existing equipment lists”, “Existing project equipment plan”. The items namely: “Plans of communications system”, “Intended project management plan”, “Listed of the subcontractors if there”. Finally, there were items perceived to be “moderately important” these are: “Networks diagrams and studies”, “Statistical information” and “Cautious development plan with dates “as shown in the table 3.7.

Table 3-7 Rate of Importance for RFP Elements- Managerial Category (Appendices)

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
I	Managerial Elements									
I.7	Appendices	Overall average					3.84	84.52	I	2
1	Intended project management plan.	12	21	9	2	0	3.98	79.55	I	7
2	Networks diagrams and studies.	5	5	24	7	3	3.05	60.91	MI	9
3	Statistical information.	2	8	20	1 2	3	2.87	57.33	MI	10
4	Plans of communications system.	15	15	14	1	0	3.98	79.56	I	6
5	Existing equipment lists	19	23	3	0	0	4.36	87.11	I	4
6	The client standards	10	34	1	0	0	4.20	84.00	I	3
7	Cautious development plan with dates.	1	2	22	1 9	1	2.62	52.44	MI	11
8	Listed of the subcontractors if there.	10	17	15	2	0	3.80	75.91	I	8
9	Required certifications and approval from the vendor.	27	15	2	1	0	4.51	90.22	EI	2
10	Existing project equipment plan.	25	8	11	0	0	4.32	86.36	I	5
11	Time schedule of the project	30	11	2	1	0	4.59	91.82	EI	1

3.7.2.2 II An Assessment Tool for Main Elements of RFP (Technical Elements)

II.1 Scope of Work and Deliverables

This main element includes five sub elements that had different values of importance index. The mean response from 45 experts who completed the questionnaire survey indicated that these elements were evaluated to be “Important” with an overall average of important index of 82.10 % for this criterion as indicated in Table 3-8.

Table 3-8 Rate of Importance for RFP Elements- Technical Category (Scope of Work and Deliverables)

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
II	Technical Elements									
II. 1	Scope of work and deliverables	Overall average					4.11	82.10	I	5
1	Provision a clear statement of the work to be achieved.	28	13	4	0	0	4.64	92.73	EI	1
2	Provision a schedule of activities the vendor should met.	10	26	8	1	0	4.00	80.00	I	3
3	Provision a schedule of the contract awarding.	3	25	15	2	0	3.64	72.89	I	5
4	Explanation of the vendor’s responsibilities.	22	22	1	0	0	4.47	89.33	EI	2
5	Vendors must understand the intended program outcomes to develop their proposals.	10	18	14	3	0	3.78	75.56	I	4

The mean response varies from “Extremely important” for sub elements such as: “Provision a clear statement of the work to be achieved”, “Explanation of the vendor’s responsibilities” while the remaining items were evaluated to be “Important” as for sub elements namely: “Provision a schedule of activities the vendor should met”, “Vendors must understand the intended program outcomes to develop their proposals”, “Provision a schedule of the contract awarding”, as shown in the table 3.8.

II.2 General Conditions

This main element includes six sub elements that had different values of importance index. The mean response from 45 experts who completed the questionnaire survey indicated that these elements were evaluated to be “Important” with an overall average of important index of 84.82 % for this criterion as indicated in Table 3-9.

The mean response was evaluated to be “Extremely important” for sub elements such as: Identifying the qualified vendors to participate in the Program” Lowest cost proposal is not necessary accepted while the remaining sub elements were evaluated to be “Important” as for items namely “Cooperation from the client to the vendors by providing them with access to the work areas that are required”,” Communication regarding the RFP should be only through the assigned person written in the RFP document”,” Validity of the proposal from the date submitted” and “Specific goals to be achieved by the project” as shown in table 3.9.

Table 3-9 Rate of Importance for RFP Elements- Technical Category

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
II	Technical Elements									
II.2	General conditions	Overall average					4.24	84.82	I	3
1	Specific goals to be achieved by the project.	5	27	11	2	0	3.78	75.56	I	6
2	Identifying the Qualified vendors to participate in the Program.	30	13	2	0	0	4.62	92.44	EI	1
3	Cooperation from the client to the vendors by providing them with access to the work areas that are required.	18	25	1	1	0	4.33	86.67	I	3
4	Validity of the proposal from the date submitted.	9	28	8	0	0	4.02	80.44	I	5
5	Lowest cost proposal is not necessary accepted.	26	19	0	0	0	4.58	91.56	EI	2
6	Communication regarding the RFP should be only through the assigned person written in the RFP document.	10	30	1	4	0	4.11	82.27	I	4

II.3 Sequencing and Scheduling

This main element includes five sub elements that had different values of importance index. The mean response from 45 experts who completed the questionnaire survey indicated that this element was evaluated to be “Important” with an overall average of important index of 71.81% for this criterion as indicated in Table 3-10.

The mean response of sub elements varies from “Extremely important” for sub elements such as : “Submission deadlines” and “Important” for the items namely “A schedule of

events related to the RFP process” ,” Arrangement of a schedule of services set forth by the client” , “The successful vendor shall coordinate with the owner to sign the attached contract within (10) days of acceptance”. Lastly there was an item that evaluated to be “Moderately Important” namely: “Proposal Evaluation Time Line“.

Table 3-10 Rate of Importance for RFP Elements- Technical Category (Sequencing and Scheduling)

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
II	Technical Elements									
II.3	Sequencing and scheduling	Overall average					3.59	71.81	I	6
1	The successful vendor shall coordinate with the owner to sign the attached contract within (10) days of acceptance.	8	8	20	7	0	3.40	67.91	I	4
2	Arrangement of a schedule of services set forth by the client.	10	10	18	7	0	3.51	70.22	I	3
3	Submission deadlines	21	22	1	1	0	4.40	88.00	EI	1
4	Proposal Evaluation Timeline	2	9	27	4	2	3.11	62.27	MI	5
5	A schedule of events related to the RFP process.	1	23	20	1	0	3.53	70.67	I	2

II.4 Vendor Qualifications and References Section

This main element includes five sub elements that had the same range of importance index. The mean response from 45 experts who completed the questionnaire survey

indicated that this element was perceived to be “ExtremelyImportant” with an overall average of important index of 87.89 % for this criterion as indicated in Table 3-11.

The mean response was evaluated to be “Extremely important” for all sub elements except the item namely: “The vendor can provide information which is applicable while not compulsory in the RFP, as shown in the table 3.11.

Table 3-11 Rate of Importance for RFP Elements- Technical Category (Vendor Qualifications and References Section)

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
II	Technical Elements									
II.4	Vendor qualifications and references section	Overall average					4.39	87.89	EI	1
1	The vendor should deliver the following:									
1.1	The vendor firm’s history in field of client project.	28	16	1	0	0	4.60	92.00	EI	2
1.2	Evidence of ability to provide sufficient skills and resources to accomplish the contract.	35	8	1	1	0	4.71	94.22	EI	1
1.3	References of previous contracts.	27	17	1	0	0	4.58	91.56	EI	3
1.4	The vendor can provide information which is applicable while not compulsory in the RFP.	8	16	20	1	0	3.69	73.78	I	4

II.5 Proposal Submission

This main element includes four sub elements that had different values of importance index. The mean response from 45 experts who completed the questionnaire survey

indicated that this element was evaluated to be “Important” with an overall average of important index of 85.20 % for this criterion as indicated in Table 3-12.

Table 3-12 Rate of Importance for RFP Elements- Technical Category (Proposal Submission)

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
II	Technical Elements									
II.5	Proposal submission	Overall average					4.26	85.20	I	2
1	The required period of proposal validity.	11	16	16	1	0	3.84	76.82	I	4
2	The client’s rights to negotiate, accept or refuse the proposal.	21	20	3	1	0	4.36	87.11	I	3
3	Vendors must submit their proposals on or before the submission deadline	24	18	3	0	0	4.47	89.33	EI	1
4	Vendors must primarily meet the requirements outlined to be considered for participation in the project.	18	26	1	0	0	4.38	87.56	EI	2

The mean response varies from “Extremely important” for items such as : “Vendors must submit their proposals on or before the submission deadline”, “Vendors must primarily meet the requirements outlined to be considered for participation in the project” while the items namely : “The client’s rights to negotiate, accept or refuse the proposal” and “The required period of proposal validity” were evaluated to be “Important” as shown in the table 3.12.

II.6 Proposal evaluation and selection criteria

This main element includes five sub elements that had two levels of importance index. The mean response from 45 experts who completed the questionnaire survey indicated that this element was evaluated to be “Important” with an overall average of important index of 83.70 % for this criterion as indicated in Table 3-13.

The mean response varies from “Extremely important” for sub elements namely: “The evaluation criteria must be linked to the specifications and requirements in the RFP” and “Importance of communicating references and evaluating vendor responses” while the remaining items namely: “RFP must classify all important factors, giving their relative importance, including price”, “Weight factors can be involved in the request for proposals” and “The general information about the criteria and the evaluation technique to be used must be part of the RFP” were evaluated to be “Important” as shown in the table 3.13.

Table 3-13 Rate of Importance for RFP Elements- Technical Category (Proposal Evaluation and Selection Criteria)

	An Assessment Tool for main elements of RFP.	EI (5)	I (4)	MI (3)	NI (2)	ENI (1)	E(X)	II%	MR	Rank
II	Technical Elements									
II.6	Proposal evaluation and selection criteria	Overall average					4.18	83.70	I	4
1	Importance of communicating references and evaluating vendor responses.	20	24	1	0	0	4.42	88.44	EI	2
2	The evaluation criteria must be linked to the specifications and requirements in the RFP	27	17	0	0	0	4.61	92.27	EI	1
3	Weight factors can be involved in the request for proposals.	17	17	1	4	3	3.97	79.4	I	4
4	RFP must classify all important factors, giving their relative importance, including price.	17	20	1	4	3	3.98	79.56	I	3
5	The general information about the criteria and the evaluation technique to be used must be part of the RFP.	17	19	1	5	3	3.93	78.67	I	5

III An Assessment Tool for Main Elements of RFP (Financial Elements)

III.1 Pricing section

This main element includes four sub elements that had only two levels of importance index.

The mean response from 45 experts who completed the questionnaire survey indicated that this element was evaluated to be “Important” with an overall average of important index of 86.67 % for this criterion as indicated in Table 3-14.

Table 3-14 Rate of Importance for RFP Elements- Financial Category (Pricing Section)

	An Assessment Tool for main elements of RFP.	EI	I	MI	N	ENI	E(X)	II%	MR	Rank
III	Financial Elements									
III.1	Pricing section	Overall average					4.33	86.67	I	1
1	The vendor shall provide the required pricing of each item.	25	18	2	0	0	4.51	90.22	EI	2
2	Pricing section concentrates on the price, size, and the function of the product.	25	16	3	1	0	4.44	88.89	I	3
3	The vendor must submit all his expenses in this section to avoid any missed or hidden costs.	32	12	1	0	0	4.69	93.78	EI	1
4	Requires the vendors how to provide the pricing data to perform the tasks.	15	11	11	6	2	3.69	73.78	I	4

The mean response varies from “Extremely important” for sub elements such as: “The vendor must submit all his expenses in this section to avoid any missed or hidden costs” and “The vendor shall provide the required pricing of each item” while the remaining sub elements were perceived to be “Important” such as : “Pricing section concentrates on the price, size, and the function of the product” and “Requires the vendors how to provide the pricing data to perform the tasks” as shown in the table 3.14.

Summary

The results obtained from the survey distributed to 65 respondents can be summarized as follows:

1. The total received respondents were 55, and 10 (about 18%) of them were not familiar with the field of study, therefore, their replies were not included in the analysis.
2. The overall average of “important” and “extremely important” will be considered in the study to standardize the RFP elements and sub elements in the operation and maintenance phase, while the remaining importance levels “moderately important, “not important” and “extremely not important” will not be included in the RFP phase as shown in Table 3-15.
3. All the elements that are between “important” and “extremely important” support the significance of the outcomes of the literature review that had been conducted to standardize the main elements of request for proposals and its sub elements as shown in the table 3-15.

Table 3-15 Summary of Importance Level for Main RFP Elements

No.	Main Elements	Overall average	Importance index	MR	Rank
1	Managerial category				
1.1	Invitation to bid	3.96	79.14	I	5
1.2	Instruction of bid competition	4.21	84.15	I	3
1.3	Organizational overview	3.86	77.27	I	7
1.4	Applicable laws and regulations	4.61	92.15	EI	1
1.5	Pre-bid tour	3.94	78.79	I	6
1.6	Contracts and awarding	3.99	79.83	I	4
1.7	Appendices	3.84	84.52	I	2
2	Technical category				
2.1	Scope of work and deliverables.	4.11	82.10	I	5
2.2	General conditions	4.24	84.82	I	3
2.3	Sequencing and scheduling	3.59	71.81	I	6
2.4	Vendor qualifications and references section	4.39	87.89	EI	1
2.5	Proposal submission	4.26	85.20	I	2
2.6	Proposal evaluation & selection criteria	4.18	83.70	I	4
3	Financial category				
3.1	Pricing section	4.33	86.67	I	1

Meanwhile, these results prove that all the main elements are significant and should be included during the preparation of the RFP phase.

During the distribution of the survey and interviews with experts, it was established that some recommendations should be added to the development of the RFP phase. These include:

- The owner shall have an automated portal to send and receive proposals.
- The RFP shall send only to the qualified and pre-selected vendors rather than wide range of them.

- The vendors have to reply within a specific period of time to acknowledge the receipt and their ability to participate.
- Importance of preparing the RFP phase with operation and maintenance at the same time with preparing the other documents such as the drawings and specifications.
- Preparing the feasibility study with the owner's procurement and contracting departments prior to setting the RFP phase. This will help in estimating the time and cost of each required phase.
- Importance of preparing the detailed evaluation and selection criteria of proposals prior to asking for proposals.
- According to interviews with the contracts departments, there is no specific form of request for proposals to be followed in their projects, even though some of them exceed ten million Saudi riyals.

CHAPTER 4

IMPLEMENTATION OF THE DEVELOPED ASSESSMENT TOOL

4.1 Request for Proposals Current Practice.

Information was gathered through interviews with several engineers in high rise buildings in Eastern Province. They recognized that operation and maintenance works need to be prepared carefully and proficiently throughout the whole phases. These phases start at the acquisition of the best suited vendors that fit the requirements such as: time, cost and commitments to provide the exact work.

On the other hand, according to interviews with the contracts departments there, it appears that there are not specific and detailed forms of request for proposals to be followed. This resulted in weak RFPs that were delivered to the vendors and ended by many conflicts.

Moreover, one of the respondents indicated that there is an automated system that manages the entire process of proposals starting from acquiring the best suited vendors up to contract awarding, but it is costly and needs a skilled team to follow and apply the processes. He added “the most common obstacles in applying an automated system in

RFP are the vendors' capabilities to apply through it which producing high cost and delaying of proposals submission".

During an interview with Eng. Waleed Alshehri, CEO of Sawaid Investment Company, he reported that many developers consider the request for proposals as a request for quotations thus, most of the vendors concentrate on the pricing section regardless of the best solution they can propose. This resulted in a lack of creativity and humble solutions for the operation and maintenance works.

4.2 Implementation of the Developed Assessment Tool for Request For Proposals.

In this part, the final developed assessment tool that was generated in chapter#3 will be applied in three case studies in Saudi Arabia's eastern province. It aims to evaluate and assess the existing request for proposals by inspection of the consistency between the outcomes of the developed assessment tool and the request for proposal practices in three projects in the region.

Case study 1: Dhahran Modern Tower.

Case study 2: AL Bassam Commercial Tower.

Case study 3: Al-Rawdha General Hospital.

4.2.1 Implementation of the Developed Assessment Tool for Request For Proposals: a Case Study#1: Dhahran Modern Tower (DMT).

General Information

This study was conducted on Dhahran Modern Tower (DMT) (as shown in figure 4-1).



Figure 4-1 Dhahran Modern Tower (DMT).

The tower is located in Khobar, Eastern Province of Saudi Arabia. It consists of 13 floors with a built up area of 39,280 m². The request for proposal was issued in 2013. The

tower is owned by Alhugait holding Company and the RFP was prepared by the Dewan consulting office-Dubai.

The RFP Contents

The received documents include five volumes with the following items:

1. Volume 1: Instruction to Tenderers.
2. Volume 2: Conditions of Contract:
 - Conditions of Contract
 - Form of Tender (with Appendices)
 - Form of Agreement
 - Professional Indemnity Insurance
3. Volume 3: Specifications: Architectural, Structural & MEP
4. Volume 4: Drawings:
 - (i) Architectural
 - (ii) Structural
 - (iii) Mechanical
 - (iv) Electrical
 - (v) Landscape
 - (vi) Interior Design
5. Volume 5: Bills of Quantities

The RFP Analysis

During inspection and analysis of the RFP's content, there were no categories of managerial, technical and financial for the elements which resulted in a misunderstanding of the priority for each element inside the RFP. There was clearly an overlapping of several elements and merging them into one section instead of classifying in a categorized way. For example: merging main elements such as: "Invitation to bid", "General conditions", "Pricing section", "Contracts awarding" under "Instruction to tenderers" section which is considered as the main elements according to the recommended assessment tool.

Application of the developed assessment tool of RFP in this case

As the second objective in this research aims to apply the developed assessment tool on three real cases from the market, the following tables (4-1: 4-14) summarize the contents of this case by comparing the final developed assessment tool to check the applicability.

There will be an explanation of each element including the strengths and weaknesses.

Invitation to Bid

The invitation to bid is the first item that should be sent to the vendors to seek their willingness to participate in proposal submission. During the analysis of the contents, the invitation to bid was not found individually but it was indicated inside the RFP by the form of acknowledgment.

During an interview with the owner representative in the building to inquire about some vague issues of the RFP and its consequences on operation and maintenance implementation he replied that the invitation to bid was an email sent to the qualified and selected vendors, so they replied with either an acceptance or they apologized. He added, the invitation to the bid is not considered as a part of the RFP.

He added “There was negative impacts on received proposals when some of unqualified vendors participated through different channels of invitation such as the owner’s personal side”.

As per the recommended assessment tool, the invitation to bid should contain several sub elements which were not found entirely such as: an appointment for pre bid tour, submitting the invitation by hand to the vendors and a brief about the project as shown in table 4-1.

Table 4-1 Comparison of Developed Assessment Tool to the Real Case (Invitation to Bid)

I	Managerial Elements	Included	Not inc.	Included in other parts	Consequences
I.1	Invitation to bid			⊗	
1	Official acknowledgment by the vendor	⊗			
2	Information about the Project.		⊗		<ul style="list-style-type: none"> Withdrawal of some vendors during proposal time.
3	Short description of objectives and scope of the project's tasks.		⊗		
4	Proposal submission instructions.			⊗	
5	Information about the client.		⊗		
6	The invitation to bid must be completed and signed by the vendor and submitted with the proposal.		⊗		
7	Sending the invitation to bid to wide range of vendors rather than shortlisted vendors.		⊗		<ul style="list-style-type: none"> Unqualified vendors applied to the project.
8	Appointment of Pre-bid tour		⊗		<ul style="list-style-type: none"> Lack of existing services lines such as electricity and water lines.
9	Submitting the invitation to bid to the vendors by hand.		⊗		<ul style="list-style-type: none"> Difficulties in recording the willing vendors to apply.
10	Provision Project title, RFP number, issue date closing date and time, contact person's name, address, address of the client.			⊗	<ul style="list-style-type: none"> Lack of controlling the communication channels.

This resulted in an absence of important information to the vendors such as: the site conditions, accessibility and availability of the required services lines and mobilizations. Moreover, there were difficulties in recording the desired vendors to apply. The lack of information about the project resulted in three vendors withdrawing from the project during the proposal period.

The previous explanation can be summarized through Table 4-1 to check the availability of the element and its sub elements. The existing items will be marked with “included” and the missed items will be marked as “not included” and if the item was indicated in other part of the RFP it will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Instruction of Bid Competition

In this case, there is a section, namely “Instruction to tenderers” which contains a massive amount of information most of which is related to other elements.

During the analysis of the contents, it was clear that most of the sub elements had been included as shown in table 4-2. The remaining items in this element are related to other main elements as per the recommended assessment tool such as: scope of work, contract conditions and agreements. The required proposal format and language were missed in the RFP. Consequently, the proposals were received in different languages

(Arabic and English) and with different formats which required more time to analyze the proposals.

There was no indication for rejection of the late proposals. This brought several proposals from other vendors who applied late and the owner accepted their proposals. This gave an unfair period of time for those who applied on time.

The joint ventures under one vendor were not mentioned in the RFP. Thus, the awarded vendor brought nonprofessional subcontractors during the maintenance work and the consultant approved them without reference to the owner.

The previous explanation can be summarized through Table 4-2 to check the availability of the element and its subcategory. The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-2 Comparison of Developed Assessment Tool to the Real Case (Instruction of Bid Competition)

I	Managerial Elements	Included	Not included	in other parts	Consequences
I.2	Instruction of bid competition	⊗			
1	Rejection of Proposals if there is a conflict of interest about the assigned project.		⊗		
2	Place and date of submission for the proposals.	⊗			
3	Required Proposal format.		⊗		<ul style="list-style-type: none"> • Various received formats. • More time to analyze.
5	Joint ventures and subcontractors under one vendor are acceptable with the applied vendor.		⊗		Nonprofessional subcontractors.
6	All proposals become irreversible upon closing time.		⊗		More negotiations and delay of awarding.
7	Rejection of any late proposals.		⊗		Unfairness for all vendors.
8	Termination of the contract if the written contract not signed by the successful vendor within 30 days of notification.		⊗		
9	Required Proposal language		⊗		More time for reviewing and selection.
10	The owner is solely responsible for his own expenses in formulating RFP.		⊗		

Organizational Overview

The organizational overview element and its sub elements namely: the problem statement, background of the project requirements and description for the client's industry were not found entirely in this RFP.

If the vendors have not experienced this type of the problem in the building, they could not propose the best solution for it.

In this specified work of operation and maintenance, there was a problem of fixing and repairing the structural works in the building, so the vendors should be asked to give the best solution to this problem. This did not happen and the vendors applied only for the assigned items in the bill of quantities, regardless of the method of problem solving.

The previous explanation can be summarized through Table 4-3 to check the availability of the element and its subcategory. The existing elements will be marked with "included" and the missed elements will be marked as "not included" and if the item was indicated in other part of RFP will be marked by "Included in other parts" which will help in developing the RFP preparation phase.

Table 4-3 Comparison of Developed Assessment Tool to the Real Case

I	Managerial Elements	Included	Not included	Included in other parts	Consequences
I.3	Organizational overview		⊗		No creative solutions.
1	Summary of problem statement.		⊗		
2	Information about the role of the clients and the background of the project or requirement		⊗		
3	Short description of the client's industry and which give the vendors understanding of clients' needs.		⊗		

Applicable Laws and Regulations

There is a volume that contains the “Conditions of Contract” and which includes all of the required laws and regulations, but there was no mention of the intended method of contracting with the awarded vendor. In this case the owner was asking for the lump sum price while the items in the bill of quantities used the unit rate method. This caused a conflict with the lowest vendor proposal.

There was no indication of considering the RFP as part of the bidder proposal. This resulted in conflict with the vendor's proposal in some clauses such as laws and regulations.

The previous explanation can be summarized through Table 4-4 to check the availability of the element and its sub elements . The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated in another part of the RFP it will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-4 Comparison of Developed Assessment Tool to the Real Case (Applicable Laws and Regulations)

I	Managerial Elements	Included	Not included	Included in other parts	Consequences
I.4	Applicable laws and regulations			⊗	
1	Considering the RFP and the Successful Bidder’s Proposal as a part of the Contract.		⊗		• Conflicts with vendor’s proposal
2	Provision of a copy of intended contract form to the vendors.	⊗			• Conflicts with lowest proposal.
3	The vendor shall be informed that the governing codes and standards of the country	⊗			• More time for negotiation the contract.

Pre-bid Tour

In this case, there was no individual section to describe this element except an indication of the importance of this phase by the term “conformance of site visit and Examining

Documents” inside the “instruction to tenderers” element and the site visit shall be arranged accordingly.

Some vendors did not visit the site and this led to uncertainty over pricing and those vendors estimated with a high price in comparison to those who visited the site.

The previous explanation can be summarized through Table 4-5 to check the availability of the element and its subcategory. The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated in another part of the RFP it will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-5 Comparison of Developed Assessment Tool to the Real Case (Pre-Bid Tour)

I	Managerial Elements	Included	Not included	Included in other parts
I.5	Pre-bid tour			⊗
1	Pre-bid tour gives the chance to the vendors to inspect the Project and fully understand the conditions.		⊗	
2	the pre-bid conference should be designated in the RFP as mandatory.		⊗	
3	Providing sign-in sheet at the pre-bid conference to document the vendors’ attendance.		⊗	
4	It should be held approximately 10 days after the requests have been mailed.		⊗	

Contracts and Awarding

This element is described as “form of agreement” which contains details of the contract itself but there were sub elements that were not included such as: conferences with the

vendors prior and after the submission, nondisclosure agreement and resolving any conflict by the owner prior to send the awarding letter.

There was no committee to check and review the proposals. There was only an engineer who is responsible for checking the proposals and the owner has the rights to accept or negotiate any proposal. This constituted unfairness in analyzing the proposals. The vendors could not follow their proposal's status transparently.

There was no indication for conferences with the vendors prior and after the submission. This caused a lack of information delivery and resolving inquiries.

The previous explanation can be summarized through Table 4-6 to check the availability of the element and its subcategory. The existing elements will be marked with "included" and the missed elements will be marked as "not included" and if the item was indicated in other part of RFP will be marked by "Included in other parts" which will help in developing the RFP preparation phase.

Table 4-6 Comparison of Developed Assessment Tool to the Real Case

I	Managerial Elements	Included	Not included	Included in other parts	Consequences
I.6	Contracts and awarding	⊗			
1	Any specific legal documents.	⊗			
2	Nondisclosure agreement		⊗		Project information released to others.
3	The notification of award and the evaluation report of the vendors' bids must be written and signed by the evaluation committee members.		⊗		Lack of committee members to review.
4	Conferences should be held with vendors who have inquiries about the result.		⊗		No chances for reply for vendors. Lack of important information to some vendors.
5	Procurement contract.		⊗		
6	The client's purchasing office should resolve any conflicts regarding RFP before sending the awarding letter.		⊗		
7	Writing the notification letter by the client's purchasing department to the successful vendor and unsuccessful vendors.		⊗		Lack of transparency

Appendices

During the analysis of this RFP, there was found a clear description of this element. The element includes:

- Performance guarantee
- Surety for tender bond
- Proposed sub-contractors
- Plant to be used
- Additional particulars
- Confirmation of site visit
- Rates of engineer and others
- Engineer's monthly charges

There was no indication for the following sub elements such as: time schedule of the project, plans of communications system, existing equipment lists and list of subcontractors.

The vendors proposed a different time scheduling for maintaining the building thus, the owner could not decide the suitable timing for finishing the work.

The previous explanation can be summarized through Table 4-7 to check the availability of the element and its subcategory. The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated

In another part of the RFP it will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-7 Comparison of Developed Assessment Tool to the Real Case (Appendices)

I	Managerial Elements	Included	Not included	Included in other parts	Consequences
I.7	Appendices	⊗			
1	Time schedule of the project		⊗		Various submission of this element.
2	Required certifications and approval from the vendor.		⊗		Lack of legal licenses of some vendors.
3	The client standards		⊗		
4	Existing equipment lists		⊗		
5	Existing project equipment plan.		⊗		Lack of accurate information
6	Plans of communications system.		⊗		
7	Intended project management plan.		⊗		
8	List of the subcontractors if there.	⊗			Non-qualified subcontractors.

An Assessment Tool for Operation and Maintenance Request for Proposals (Technical Category).

Scope of Work and Deliverables

In this part of the technical category, the scope of work and deliverables were found inside the “instruction to tenderers” section. The following sub elements were not included in this element such as: a schedule of activities the vendor should met, a schedule of the contract awarding which resulted in various of pricing and inability of some vendors to meet some type of activities.

The previous explanation can be summarized through Table 4-8 to check the availability of the element and its subcategory. The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated in other part of the RFP it will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-8 Comparison of Developed Assessment Tool to the Real Case (Scope of Work and Deliverables)

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.1	Scope of work and deliverables			⊗	
1	Provision a clear statement of the work to be achieved.			⊗	
2	Explanation of the vendor's responsibilities.			⊗	Variance in pricing.
3	Provision a schedule of activities the vendor should met.		⊗		Inability of vendors to meet activities on time.
4	Vendors must understand the intended program outcomes to develop their proposals.		⊗		
5	Provision a schedule of the contract awarding.		⊗		

General Conditions

There is a specific volume for this element in the RFP but it contains several subcategories and clauses which led to confusion over the most important issues.

In general, in the RFP there were many details of what the contract seems to be, while it should only specify major conditions of the RFP such as: the communication channels, the cooperation between the owner and the vendors, importance of not accepting the lowest cost proposals and proposal validity after submission.

The previous explanation can be summarized through Table 4-9 to check the availability of the element and its subcategory. The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-9 Comparison of Developed Assessment Tool to the Real Case (General Conditions)

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.2	General conditions	⊗			
1	Identifying the Qualified vendors to participate in the Program.		⊗		
2	Lowest cost proposal is not necessary accepted.		⊗		Prices was the only factor of selection.
3	Cooperation from the client to the vendors by providing them with access to the work areas that are required.		⊗		
4	Communication regarding the RFP should be only through the assigned person written in the RFP document.		⊗		Various channels of communications.
5	Validity of the proposal from the date submitted.		⊗		Some vendors assigned their own proposal validity.
6	Specific goals	⊗			

Sequencing and Scheduling

In this case there is no statement for sequencing and scheduling the RFP process entirely but during an analysis of the RFP, only the submission deadline was found. A lack of sequencing and scheduling activities caused conflicts with the awarded vendor during signing the contract and starting the work.

The previous explanation can be summarized through Table 4-10 to check the availability of the element and its subcategory. The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-10 Comparison of Developed Assessment Tool to the Real Case (Sequencing and Scheduling)

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.3	Sequencing and scheduling		⊗		
1	Submission deadlines		⊗		Late proposals.
2	A schedule of events related to the RFP process.		⊗		Project delay.
3	Arrangement of a schedule of services set forth by the client.		⊗		
4	The successful vendor shall coordinate with the owner to sign the attached contract within (10) days of acceptance.		⊗		

Vendor Qualifications and Reference Section

This element is clearly and completely described inside the RFP as per the recommended assessment tool. It was completely compatible and fully described with all sub elements as shown in table (4-11) except the vendors had not had similar projects conducted before in their organizations and there was a lack of unknown information of the vendors.

Table 4-11 Comparison of Developed Assessment Tool to The Real Case

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.4	Vendor qualifications and references section	⊗			
1	The vendor should deliver the following:				
1.1	Evidence of ability to provide sufficient skills and resources to accomplish the contract.	⊗			
1.2	The vendor firm's history in field of client project.		⊗		No experience in the specific problem.
1.3	References of previous contracts.		⊗		No experience in the specific problem.
1.4	The vendor can provide information which is applicable while not compulsory in the RFP.	⊗			Lack of unknown information of vendors.

Proposal Submission

This element is clearly and completely described inside the RFP in the section “instruction to tenderers”. It is completely compatible and fully provided with all sub elements as per the recommended assessment tool except the submission deadline as shown in table (4-12). This helped the vendors to fit their proposals as per the instructions.

Table 4-12 Comparison of Developed Assessment Tool to the Real Case (Proposal Submission)

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.5	Proposal submission	⊗			
1	Vendors must submit their proposals on or before the submission deadline			⊗	delay of Submission
2	Vendors must primarily meet the requirements outlined to be considered for participation in the project.			⊗	
3	The client’s rights to negotiate, accept or refuse the proposal.			⊗	
4	The required period of proposal validity.			⊗	

Proposal Evaluation and Selection Criteria

This element was not found at all in the RFP. Thus it brought several inquiries from the vendors who submitted their proposals about selection criteria. The absence of this element will subject the proposal selection to the nonsystematic method. The owner representative clarified that the price was the only factor of selection in this project regardless of the type of proposed solutions and the vendors' capabilities. The results in table (4-13) show the lack of this element and sub elements.

Table 4-13 Comparison of Developed Assessment Tool to the Real Case (Proposal Evaluation and Selection Criteria)

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.6	Proposal evaluation and selection criteria		⊗		<ul style="list-style-type: none"> • Unfairness of selection method. • Selection of unqualified vendor.
1	The evaluation criteria must be linked to the specifications and requirements in the RFP		⊗		
2	Importance of communicating references and evaluating vendor responses.		⊗		
3	RFP must classify all important factors, giving their relative importance, including price.		⊗		
4	Weight factors can be involved in the request for proposals.		⊗		
5	The general information about the criteria.		⊗		

Pricing Section

This element is one of the most important elements in the RFP. There was an individual element to describe it but it was under the instruction in the tenderers section. Furthermore, the pricing element was indicated in the bill of quantities only and there was lack of instructions for the procedure of pricing such as: asking to provide the pricing and its relevant conditions in one section rather than placing it inside other sections. Moreover, there were no instructions for the vendor to fill out all the items as a condition of accepting his proposal.

Table 4-14 Comparison of Developed Assessment Tool to the Real Case (Pricing Section)

III	Financial Elements	Included	Not included	Included in other parts	Consequences
III.1	Pricing section	⊗			
1	The vendor must submit all his expenses in this section to avoid any missed or hidden costs.		⊗		Placing the prices in various areas in proposal.
2	The vendor shall provide the required pricing of each item.		⊗		Some vendors priced by lump sum way.
3	Pricing section concentrates on the price, size, and the function of the product.		⊗		Variance in prices.
4	Requires the vendors how to provide the pricing data to perform the tasks.		⊗		

The previous explanation can be summarized through Table 4-14 to check the availability of the element and its subcategory. The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

4.2.2 implementation of the Developed Assessment Tool for Request For Proposals: a Case Study#2: (AL Bassam Commercial Tower).

General Information

This study was conducted on AL Bassam Commercial Tower (as shown in figure 4-2). The tower is located in Dammam, Eastern Province of Saudi Arabia. It consists of 13 floors with a built up area of 26,200 m². The request for proposal was issued in 2013. The tower is owned by AL Bassam Company and the RFP was prepared by the owner engineering department.



Figure 4-2 AL Bassam Commercial Tower

The RFP Contents

The received documents from the owner contain the following items:

1. Invitation letter.
2. Specifications for Structural, Architectural Woks, Mechanical Works
3. Bills of Quantities
4. As built Drawings

The RFP Analysis

An interview had been conducted with Eng. Ahmed Alidreesi who is working as a consultant engineer in the site. It can be noticed that there is a lack of several elements of RFP in this project. There was a different method for acquiring and selecting the vendors.

It can be summarized as follows:

The invitation letter contains the following information:

- Scope of work
- Importance of site visit to check the existing status of the project.
- Submission deadline.
- The contact details.

As built drawings and the required specifications were sent to the vendors besides the invitation letter.

The bill of quantities includes all the required items to be priced.

Application of the Developed Assessment Tool of RFP in this Case

As per the discussion with the consultant engineer for the building, it can be noticed that there was an absence of a huge amount of data, especially during this critical phase of the project which is about maintaining most of the architectural works.

The previous explanation can be summarized through Table 4-15 to check the availability of the element and its subcategory. The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-15 Comparison of Developed Assessment Tool to the Real Case.

No.	Main Elements	Included	Not included	Included in other parts	Consequences
1	Managerial category				
1.1	Invitation to bid	⊗			non-qualified vendors
1.2	Instruction of Bid Competition		⊗		
1.3	Organizational overview		⊗		lack of solutions
1.4	Applicable laws and regulations		⊗		conflict of interest happened.
1.5	Pre-Bid Tour			⊗	Variance in pricing
1.6	Contracts and awarding		⊗		Delay of project starting
1.7	Appendices		⊗		
2	Technical category				
2.1	Scope of work and Deliverables.			⊗	
2.2	General conditions		⊗		more negotiation and moving to the next vendor after awarding.
2.3	Sequencing and Scheduling		⊗		Late Proposals
2.4	Vendor Qualifications and References Section		⊗		lack of vendor capabilities.
2.5	Proposal Submission		⊗		non commitment to the common proposal submission
2.6	Proposal Evaluation & selection criteria		⊗		Concentration of low prices only regardless the other factors.
3	Financial category				
3.1	Pricing section			⊗	Bill of quantities not enough for.

There are consequences of this method of the RFP preparing phase. It can be summarized as follows:

- Lack of main elements such as: instruction of bid competition, general conditions, vendor qualification and proposal evaluation and selection criteria. This resulted in different ways of proposals submission as well as large differentiation of prices among vendors.
- The applied vendors were not obligated to submit their proposals on specific period of time because of not stating the rejection of late proposals.
- The form of contract had not been submitted to the vendors prior to submission which resulted in delaying of starting the project due to extensive negotiation between the vendor and the owner ended by recall the next lowest proposal.

4.2.3 Implementation of the Developed Assessment Tool for Request for proposals: a Case Study (AlRawdha General Hospital).

General Information

This study was conducted on AlRawdha General Hospital (as shown in figure 4-3). The building is located in Dammam. The request for proposal was issued in 2017.



Figure 4-3 AlRawdha General Hospital.

The RFP Contents

This RFP has been acquired from (Asas Riyadhah contracting Co.) who will apply to this project. It contains eight sections listed as follows:

Section 1 –Letter of Invitation.

Section 2 – Instructions to Proposers (including Data Sheet).

Section 3 – Terms of Reference.

Section 4 – Proposal Submission Form.

Section 5 – Documents Establishing the Eligibility and Qualifications of the Proposer

Section 6 – Technical Proposal Form.

Section 7 – Financial Proposal Form.

Section 8 – Contract for Professional Services, including General Terms and Conditions

During inspection and analysis of this RFP's contents, there was a systematic arrangement of the RFP and its contents throughout all the sections. Moreover it contains most of the recommended elements that were developed in this research for example: there are technical and financial categories inside the RFP.

Application of the Developed Assessment Tool of RFP in this Case

As the second research objective in this research aims to apply the developed assessment tool on three real cases from the market, the following tables (4-16 : 4-29) summarize the contents of this case by comparison with the assessment tool that resulted from the literature review and the distributed questionnaire to see the applicability and validity.

There will be an explanation of each section including the strengths and weaknesses of this case.

Invitation to Bid

The invitation to bid is the first item that should be sent to the vendors to seek their desire in participation in proposal submission. During the analysis of the contents, the invitation to bid was available in the first part of the RFP which is compatible with the recommended assessment tool. The results shown in table (4-16).

Table 4-16 Comparison of Developed Assessment Tool to the Real Case (Invitation to Bid)

I	Managerial Elements	Included	Not included	Included in other parts	Consequences
I.1	Invitation to bid	⊗			
1	Official acknowledgment by the vendor	⊗			
2	Information about the Project.	⊗			
3	Short description of objectives and scope of the project's tasks.		⊗		
4	Proposal submission instructions.	⊗			
5	Information about the client.	⊗			
6	The invitation to bid must be completed and signed by the vendor and submitted with the proposal.	⊗			
7	Sending the invitation to bid to wide range of vendors rather than shortlisted vendors.	⊗			
8	Appointment of Pre-bid tour	⊗			Early discussion on this issue.
9	Submitting the invitation to bid to the vendors by hand.	⊗			
10	Provision Project title, RFP number.	⊗			

Instruction of Bid Competition

In this case, there is a volume namely “instructions to Proposers” which contains only the required information to guide and instruct the vendors on how to bring and deliver their proposals successfully. During the analysis of the contents of this item, it was clear that all sub elements had been achieved as shown in the results in table (4-17)

Table 4-17 Comparison of Developed Assessment Tool to the Real Case (Instruction of Bid Competition)

I	Managerial Elements	Included	Not included	Included in other parts	Consequences
I.2	Instruction of bid competition	⊗			
1	Rejection of Proposals if there is a conflict of interest about the assigned project.	⊗			Vendors adapted to most of the instruction
2	Place and date of submission for the proposals.	⊗			
3	Required Proposal format.	⊗			
4	The owner has the rights to adjust or withdraw a proposal prior to the closing date and time.	⊗			

I	Managerial Elements	Included	Not included	Included in other parts	Consequences
5	Joint ventures and subcontractors under one vendor are acceptable with the applied vendor.	⊗			
6	All proposals become irreversible upon closing time.	⊗			
7	Rejection of any late proposals.	⊗			
8	Termination of the contract if the written contract not signed by the successful vendor within 30 days of notification.	⊗			
9	Required Proposal language	⊗			lack of commitment from some vendors .
10	The owner is solely responsible for his own expenses in formulating RFP.	⊗			

Organizational Overview

In this case, there is no mention at all for this division but there is a description for the background of the project requirements, while there is no description for the client's industry. The results in table (4-18) show the existing elements marked with "included", the missed elements will be marked as "not included" and if the item was indicated in other part of RFP will be marked by "Included in other parts" which will help in developing the RFP preparation phase.

Table 4-18 Comparison of Developed Assessment Tool to the Real Case

I	Managerial Elements	Included	Not included	Included in other parts	Consequences
I.3	Organizational overview		⊗		
1	Summary of problem statement.		⊗		
2	Information about the role of the clients and the background of the project or requirement	⊗			
3	Short description of the client's industry and which give the vendors understanding of clients' needs.		⊗		

Applicable Laws and Regulations

In this case, there is a section namely “Contract for Professional Services” which includes all of the required laws and regulations, as well as the form of agreement.

The results in table (4-19) show the existing elements marked with “included”, the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-19 Comparison of Developed Assessment Tool to the Real Case (Applicable Laws and Regulations)

I	Managerial Elements	Included	Not included	Included in other parts
I.4	Applicable laws and regulations	⊗		
1	Considering the RFP and the Successful Bidder's Proposal as a part of the Contract.	⊗		
2	Provision of a copy of intended contract form to the vendors.	⊗		
3	The vendor shall be informed that the governing codes and standards of the country	⊗		

Pre-bid Tour

In this case, there is no individual division that contains any description for this element except their mention of the importance of this phase by the term “terms of references” inside the “conditions of contracts” volume and the site visit shall be arranged afterward. The previous explanation can be summarized through Table 4-20 to check the availability of the element and its subcategory. The existing elements will be marked with “included” and the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-20 Comparison of Developed Assessment Tool to the Real Case (Pre-Bid Tour)

I	Managerial Elements	Included	Not included	Included in other parts	Consequences
I.5	Pre-bid tour			⊗	
1	Pre-bid tour gives the chance to the vendors to inspect the Project and fully understand the conditions.	⊗			modification of specification.
2	the pre-bid conference should be designated in the RFP as mandatory.	⊗			Obligation of the vendors to visit the site
3	Providing sign-in sheet at the pre-bid conference to document the vendors' attendance.		⊗		
4	It should be held approximately 10 days after the requests have been mailed.		⊗		
5	The date and time of the pre-bid meeting should be placed on the front of the RFP.		⊗		discussion about the time suited for each vendor.

Contracts and Awarding

This element is clearly and completely described as the form of agreement and the details of the contract itself. The results in table (4-21) show the existing elements marked with “included”, the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-21 Comparison of Developed Assessment Tool to the Real Case(Contracts and Awarding)

I	Managerial Elements	Included	Not included	Included in other parts
I.6	Contracts and awarding	⊗		
1	Any specific legal documents.	⊗		
2	Nondisclosure agreement	⊗		
3	The notification of award and the evaluation report of the vendors' bids must be written and signed by the evaluation committee members.	⊗		
4	Conferences should be held with vendors who have inquiries about the result.	⊗		
5	Procurement contract.		⊗	
6	The client's purchasing office should resolve any conflicts regarding RFP before sending the awarding letter.	⊗		
7	Writing the notification letter by the client's purchasing department to the successful vendor and unsuccessful vendors.	⊗		

Appendices

In this element and during the analysis of this RFP, it is found that each section has its appendices in the same section instead of putting everything in the last part of the RFP. The results in table (4-22) show the existing elements marked with “included”, the missed elements will be marked as “not included” and if the item was indicated in other

part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-22 Comparison of Developed Assessment Tool to the Real Case (Appendices)

I	Managerial Elements	Included	Not included	Included in other parts
I.7	Appendices	⊗		
1	Time schedule of the project	⊗		
2	Required certifications and approval from the vendor.	⊗		
3	The client standards	⊗		
4	Existing equipment lists	⊗		
5	Existing project equipment plan.	⊗		
6	Plans of communications system.	⊗		
7	Intended project management plan.	⊗		
8	List of the subcontractors if there.	⊗		

An Assessment Tool for Operation and Maintenance Request For Proposals (Technical Category).

Scope of Work and Deliverables

In this part of the technical category, the scope of work and deliverables were found inside the “terms of references” section.

There is a compatibility of all the sub elements of this element with the developed assessment tool as shown in table (4-23) .

Table 4-23 Comparison of Developed Assessment Tool to the Real Case (Scope of Work and Deliverables)

II	Technical Elements	Included	Not included	Included in other parts
II.1	Scope of work and deliverables	⊗		
1	Provision a clear statement of the work to be achieved.	⊗		
2	Explanation of the vendor's responsibilities.	⊗		
3	Provision a schedule of activities the vendor should met.	⊗		
4	Vendors must understand the intended program outcomes to develop their proposals.	⊗		
5	Provision a schedule of the contract awarding.	⊗		

General Conditions

There is no specific section for this element in the RFP but it is included in section#8 which contains the contract for professional services. All the conditions of this element are available. The results in table (4-24) show the existing elements marked with “included”, the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-24 Comparison of Developed Assessment Tool to the Real Case (General Conditions)

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.2	General conditions	⊗			
1	Identifying the Qualified vendors to participate in the Program.	⊗			
2	Lowest cost proposal is not necessary accepted.	⊗			
3	Cooperation from the client to the vendors by providing them with access to the work areas that are required.			⊗	
4	Communication regarding the RFP should be only through the assigned person written in the RFP document.			⊗	
5	Validity of the proposal from the date submitted.			⊗	
6	Specific goals to be achieved by the project.			⊗	

Sequencing and scheduling

In this case there is no specific section for this element in the RFP. During the analysis of the RFP it the availability of some subcategories was found in various places such as : in general conditions and instruction to proposers.

The results in table (4-25) show the existing elements marked with “included”, the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-25 Comparison of Developed Assessment Tool to the Real Case (Sequencing and Scheduling)

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.3	Sequencing and scheduling		⊗		
1	Submission deadlines	⊗			
2	A schedule of events related to the RFP process.	⊗			
3	Arrangement of a schedule of services set forth by the client.	⊗			
4	The successful vendor shall coordinate with the owner to sign the attached contract within (10) days of acceptance.		⊗		

Vendor Qualifications and Reference Section

This element is clearly and completely described inside the RFP. It is completely compatible and fully described with all subcategories as shown in table (4-26).

Table 4-26 Comparison of Developed Assessment Tool to The Real Case (Vendor Qualifications and References Section).

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.4	Vendor qualifications and references section	⊗			
1	The vendor should deliver the following:				
1.1	Evidence of ability to provide sufficient skills and resources to accomplish the contract.		⊗		Some vendors with less experience have applied. Some vendors had no experience of with this type of project.
1.2	The vendor firm's history in field of client project.		⊗		
1.3	References of previous contracts.		⊗		
1.4	The vendor can provide information which is applicable while not compulsory in the RFP.		⊗		

Proposal Submission

This element is clearly and completely described inside the RFP. It is completely compatible and fully described with all subcategories as shown in table (4-27).

Table 4-27 Comparison of Developed Assessment Tool to the Real Case (Proposal Submission)

II	Technical Elements	Included	Not included	Included in other parts
II.5	Proposal submission	⊗		
1	Vendors must submit their proposals on or before the submission deadline	⊗		
2	Vendors must primarily meet the requirements outlined to be considered for participation in the project.	⊗		
3	The client's rights to negotiate, accept or refuse the proposal.	⊗		
4	The required period of proposal validity.	⊗		

Proposal Evaluation and Selection Criteria

In this case there is no individual section for this element but it was clearly stated in the “instruction to proposers” section and all the required details were explained there. The results in table (4-28) show the existing elements marked with “included”, the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-28 Comparison of Developed Assessment Tool to the Real Case (Proposal Evaluation and Selection Criteria)

II	Technical Elements	Included	Not included	Included in other parts	Consequences
II.6	Proposal evaluation and selection criteria			⊗	
1	The evaluation criteria must be linked to the specifications and requirements in the RFP			⊗	Technical evaluation and financial evaluation factors.
2	Importance of communicating references and evaluating vendor responses.			⊗	
3	RFP must classify all important factors, giving their relative importance, including price.			⊗	
4	Weight factors can be involved in the request for proposals.			⊗	
5	The general information about the criteria and the evaluation technique to be used must be part of the RFP.			⊗	

Pricing Section

This element is one of the most important elements in the RFP. There was an individual section, namely “financial offer” which contains all the instructions and required details

for what is needed to complete the pricing successfully. The results in table (4-29) show the existing elements marked with “included”, the missed elements will be marked as “not included” and if the item was indicated in other part of RFP will be marked by “Included in other parts” which will help in developing the RFP preparation phase.

Table 4-29 Comparison of Developed Assessment Tool to the Real Case (Pricing Section)

III	Financial Elements	Included	Not included	Included in other parts	Consequences
III.1	Pricing section	⊗			
1	The vendor must submit all his expenses in this section to avoid any missed or hidden costs.	⊗			
2	The vendor shall provide the required pricing of each item.	⊗			
3	Pricing section concentrates on the price, size, and the function of the product.		⊗		
4	Requires the vendors how to provide the pricing data to perform the tasks.	⊗			

4.3 Discussion

While applying the developed assessment tool to three case studies to test their applicability, some observations and recommendations have been highlighted as follows:

provision of the awareness for the owners and developers about the importance of integrity of all the RFP elements and the differentiation between an RFP which seeks the best solution and an RFQ that seeks the lowest price only.

In the cases of the Dhahran modern tower and Rawdha hospital, it was clear that there were specialized consulting offices which controlled the whole process systematically with regards to integration of all sides of project.

There was a consistency of outcomes of the developed assessment tool and the two cases “Dhahran modern tower and Rawdha hospital”, while there were weaknesses in the case “AL Bassam Tower”.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this research, an assessment tool for a request for proposals for the operation and maintenance of high rise buildings in Saudi Arabia was developed and this assessment tool was applied in three case studies to demonstrate its applicability . In this chapter, a summary of the research is discussed, followed by conclusions derived from the research and recommendations which are made for possible future studies.

5.2 Summary of Study

The main objectives of this research were to formalize an assessment tool for request for proposals for the operation and maintenance of high rise buildings in Saudi Arabia. An assessment tool is a set of elements (managerial, technical and financial) that must be met in preparing the request for proposals to ensure that the main and sub elements have been covered and mentioned in the documents when it will be sent to the vendors to establish a very strong and straightforward contractual relationship.

The methodology consists of five phases. First, the research focused on identifying the main elements of the request for proposals. The research focused on acquiring the

knowledge through an extensive literature review including Saudi standard government conditions and specifications of operation and maintenance in Saudi Arabia.

Next, the main and sub elements were identified; resulting in the listing of eighty-four sub elements under fourteen main elements. These elements have been classified into three main categories in order to group the main elements which address the same issue. This phase was carried out through surveying and synthesizing various knowledge areas on the request for proposals documented in international literature sources.

Next, a pilot study was conducted through interviews with five operation and maintenance experts on high rise buildings, with at least 10-15 years of experience, to assess the proposed RFP elements to be used for the assessment tools for high rise buildings.

Then, the identified 14 main elements with 84 sub elements were assessed to investigate their applicability and determine the level of importance for each element of the assessment tools in Saudi Arabia. This phase was carried out through the development of the questionnaire survey. The questionnaire was developed and distributed to 65 experts and then collected from 55 operation and maintenance experts in the Eastern Province of Saudi Arabia. 10 of the respondents were not included in the survey analysis because they are not familiar with the RFP processes. The remaining responses were analyzed by five Likert scales (Extremely important, Important, Moderately important, Not important and Extremely not important). The analysis resulted in determining the level of importance for each element.

The elements which had “Moderately important, Not important and Extremely not important were not included in the final assessment tool. The final main elements were 14 with 77 sub elements. Finally, three case studies were analyzed to demonstrate the applicability of the final developed assessment tools for request for proposals, and then a set of conclusions and recommendations were developed. Areas of future research are also highlighted.

5.3 Conclusion

The following conclusions were reached based on this research:

1. Surveying and integrating various knowledge areas on request for proposals documented in international literature sources and local government standards of RFP resulted in identifying eighty-four sub elements under fourteen main elements, grouped into three main categories, namely: managerial, technical and financial.
2. A questionnaire survey was developed, for the purpose of the assessment of the identified main and sub elements. The sample size, which was determined by using equations, is 25. However, the distribution survey was 65 and 55 were received which were filled in by operation and maintenance experts who are working in more than 50 different organizations that are related to high rise buildings in the Eastern Province of Saudi Arabia (see appendix II). The findings revealed that 96% of them worked in the maintenance department of private organizations , 40% of the

respondents were working as facility and maintenance managers, 78 % of them had over 10 years" experience, 30 and 40 of them worked on the commercial and residential high rise buildings projects and

3. The assessment's results demonstrated that there was variable rating of importance for the elements and sub elements. According to the methodology of achieving the final assessment tool, the assessed elements with at least 67% of importance rating will be included in the assessment tool. Thus, only seven sub elements were eliminated due to its low importance rating (below 67%).

4. Seventy-seven of sub elements under fourteen main elements were assessed as "Extremely Important"" or "Important". With importance rating more than 67% The assessment's results indicated that the highest weight was given to the managerial element "Applicable laws and regulations" with the important index of 92.15%. However, it was indicated that the lowest weight was given to the technical elements "Sequencing and Scheduling" with the importance index of 71.81%.

5. In answering the question of adding any elements by the respondents that are necessary, the respondents' comments as follows:

- Importance of outsourcing the RFP phase with operation and maintenance at the same time with preparing the other documents such as the drawings, specifications. (this comment was included and covered under the managerial category –I.1.3)

- Importance of establishing an electronic portal through the web to send, receive and processing all the stages from preparing the RFP and ending by assigning the successful vendor. (this comment was included and covered under the managerial category –I.1.11)
- Preparing the feasibility study by the owner procurement and contracting departments prior to setting the RFP phase in order to estimate the time, cost of each required phase. (this comment applicable for Pre-RFP phase which is out of the research scope).
- Importance of including detailed selection criteria of proposals prior to asking for proposals. (this comment was covered in the technical category under part II-6 that gives more details about this issue)
- According to interviews with the contracts departments there, it appears that there are not specific forms for the request for proposals to be followed nowadays. The standard RFP elements will help in closing this gap.

6. The developed assessment tool was tested by its implementation in three cases studies which were selected from high rise buildings which are: Case study 1: Dhahran Modern tower, Case study 2: AL Bassam Commercial Tower and Case study 3: AlRawdha General Hospital. The developed assessment tool revealed that there are missing elements and consequences due to absence of those elements as follows :

6.1 In case study #1: there were missed elements such as: invitation to bid, organizational overview, sequencing and scheduling, Applicable laws and regulations and Proposal evaluation and selection criteria.

Moreover, there were sub elements which had been missed such as: Appointment of pre-bid tour, Required proposal format. Rejection of any late proposals. Nondisclosure agreement and Required proposal format.

The consequences of lack of RFP that submitted to the vendors were : The variance of prices among vendors, withdrawal of some vendors during proposal time, unqualified vendors applied to the project, various received formats.

More time to analyze, lack of creative solutions and more negotiations and delay of awarding.

6.2 In case study #2 there were absence of the main body of the RFP therefore, the client submitted only the invitation letter, drawings, Specifications and the bill of quantities to the vendors which resulted in several consequences as follows: conflict of interest, Variance in pricing, Delay of project starting, lack of vendor capabilities. no commitment to the common proposal submission, more negotiation and moving to the next vendor after awarding.

6.3 In case study#3: it was obviously there are professional classification for the elements of the RFP. Most of the elements were covered and the proposal evaluation criteria was mentioned clearly in the RFP.

There were some consequences happened during the evaluation such as: Variance in pricing, late proposals and delay of project starting.

5.4 Recommendations

The following recommendations are developed from the research described in this report:

1. The developed assessment tool should be implemented to assess the availability of the main and sub elements of RFP in high rise buildings in the Kingdom.
2. Further studies should be carried out to assess existing the request for proposals that are prepared by the developers' technical departments as well as the consultants' offices which are responsible for producing the request for proposals in high rise buildings in the Kingdom.
3. The Saudi council of engineers and Saudi council of contractors should have a complete and updated database for each type of project including building codes and officially qualified contractors.
4. Importance of encouraging the consultancy firms and contractors to have an awareness of the request for proposals prior to ask for proposals for projects.

5.5 Directions for Future Research

It has been observed that there is no focused research related to an assessment tool for the request for proposals for the operation and maintenance of high rise buildings that cost

millions of riyals in Saudi Arabia. There is a need therefore to conduct such research to improve the practice of the request for proposals. Also, this research is limited to high rise buildings in the Eastern Province of Saudi Arabia. Future studies might be conducted using a wider range to cover the main cities of Saudi Arabia with different types of buildings.

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APPENDIX I



King Fahd University of Petroleum and Minerals
College of Environmental Design
Architectural Engineering Department

Dear Sir,

Subject: Development of An Assessment Tool for Main Operation and Maintenance Request for Proposals Elements of High-Rise Buildings in Saudi Arabia.

I am a master student in Architectural Engineering Department, at King Fahd University of Petroleum and Mineral. I am now undertaking my master thesis titled “Development of An Assessment Tool for Main Operation and Maintenance Request for Proposals Elements of High-Rise Buildings in Saudi Arabia”. An assessment tool is a set of clauses (managerial, technical, and financial elements) that must be met operation and maintenance departments to ensure the consistency of this solicitation is achieved by those who prepare the RFP process. The purpose of this survey is to identify these elements and its subdivisions and assess their significance by operation and maintenance experts. The structural of the survey questionnaire divided into two parts which include:

Part One: Respondent Information

Part Two: Development of An Assessment Tool for Main Operation and Maintenance Request for Proposals Elements of High-Rise Buildings in Saudi Arabia.

Please complete the attached survey within one week and return it to the address given below. I appreciate your help and support in this matter:

Architectural Engineering
Department

King Fahd University of Petroleum
and Minerals

Dhahran 31261

Saudi Arabia

E-mail:

g201401880@kfupm.edu.sa

Mobile: 0559493998

Thank you for your cooperation

Part One - Respondent Information

1) Respondent Data

Respondent Name (Optional)	
Company Name (Optional)	
Telephone no(Optional)	
Fax (Optional)	
Email Address(Optional)	
Company Address (Optional)	

2) What is the nature of your company/organization?

a) Public			
b) Private			

3) What is the number of personnel in your company/organization?

a) 1-50		c) 100-150	
b) 50- 100		d) More than150	

4) What is your position in your company/organization?

Maintenance Manager	
Facility Manager	
Engineering\Architect	
Others: please specify:	

5) How many years of experience do you have in operation and maintenance department of your company/organization?

a) Less than 10 years		c) 20-30 years	
b) 10-20 years		d) Over 30 years.	

6) What are the kinds of projects that you primarily worked on?

a) Educational projects.		d) Office projects	
b) Residential projects		Others please determine.....	
c) Commercial projects			

7) Have you been involved in developing RFP documents? Yes ☐ No ☐

If Yes, please answer the following:

8) How many years of experience do you have in developing the RFP process?

a) Less than 10 years				c) 20-30 years	
b) 10-20 years				d) Over 30 years.	

9) How many RFP documents have you developed or participated in issuing it?

a) 1-5 RFP				c) 5-10 RFP	
b) 10-15 RFP				d) Over 15 RFP.	

Part Two: Development of an Assessment Tool for RFP Elements in High rise buildings in Saudi Arabia.

Please mark the level of importance of each of the following elements which you consider in developing RFP documents by picking one of the following assessment rating scales:

Extremely Important (EI), Important (I), Moderately Important (MI), Not Important (NI) and Extremely Not Important (ENI)

	An Assessment Tool for main elements of RFP.	EI	I	MI	NI	ENI
	I. Managerial Elements					
	I.1 Invitation to bid					
1	Information about the Project.					
2	Information about the client.					
3	The invitation to bid must be completed and signed by the vendor and submitted with the proposal.					
4	Proposal submission instructions.					
5	Appointment of Pre-bid tour					
6	Short description of objectives and scope of the project's tasks.					

7	Provision Project title, RFP number, issue date closing date and time, contact person's name, address, address of the client.					
8	Official acknowledgment by the vendor					
9	Submitting the invitation to bid to the vendors by hand.					
10	Sending the invitation to bid to wide range of vendors rather than shortlisted vendors.					
	Provision a web portal for sending and receiving the proposals and all related activities .					
	I.2 Instruction of Bid Competition					
1	Place and date of submission for the proposals.					
2	Required Proposal language					
3	Required Proposal format.					
4	Any inquiries about the bidding process.					
5	Rejection of any late proposals.					
6	Rejection of Proposals if there is a conflict of interest about the assigned project.					
7	Termination of the contract if the written contract not signed by the successful vendor within 30 days of notification.					
8	The owner has the rights to adjust or withdraw a proposal prior to the closing date and time.					
9	All proposals become irreversible upon closing time.					
10	The owner is solely responsible for his own expenses in formulating RFP.					
11	Joint ventures and subcontractors under one vendor are acceptable with the applied vendor.					
	I.3 Organizational overview					
1	Summary of problem statement.					
2	Information about the role of the clients and the background of the project or requirement					
3	Short description of the client's industry and which give the vendors understanding of clients' needs.					
	I.4 Applicable laws and regulations					
1	Provision of a copy of intended contract form to the vendors.					
2	The vendor shall be informed that the governing codes and standards of the country					

3	Considering the RFP and the Successful Bidder's Proposal as a part of the Contract.					
	I.5 Pre-Bid Tour					
1	It should be held approximately 10 days after the requests have been mailed.					
2	the pre-bid conference should be designated in the RFP as mandatory.					
3	Not accepting any further questions after a specific period of pre-bid tour.					
4	The date and time of the pre-bid meeting should be placed on the front of the RFP.					
5	Providing sign-in sheet at the pre-bid conference to document the vendors' attendance.					
6	Pre-bid tour gives the chance to the vendors to inspect the Project and fully understand the conditions.					
	I.6 Contracts and awarding					
1	The notification of award and the evaluation report of the vendors' bids must be written and signed by the evaluation committee members.					
2	Writing the notification letter by the client's purchasing department to the successful vendor and unsuccessful vendors.					
3	Signing the contract within seven (7) working days after notifying the awarded vendor.					
4	The client's purchasing office should resolve any conflicts regarding RFP before sending the awarding letter.					
5	Conferences should be held with vendors who have inquiries about the result.					
6	Procurement contract.					
7	Nondisclosure agreement					
8	Any specific legal documents.					
	I.7 Appendices					
1	Intended project management plan.					

2	Networks diagrams and studies.					
3	Statistical information.					
4	Plans of communications system.					
5	Existing equipment lists					
6	The client standards					
7	Cautious development plan with dates. Listed of the subcontractors if there.					
8	Required certifications and approval from the vendor.					
9	Existing project equipment plan.					
10	Time schedule of the project					
II. Technical Elements						
II.1 Scope of work and Deliverables.						
1	Provision a clear statement of the work to be achieved.					
2	Provision a schedule of activities the vendor should met.					
3	Provision a schedule of the contract awarding.					
4	Explanation of the vendor's responsibilities.					
5	Vendors must understand the intended program outcomes to develop their proposals.					
II.2 General conditions						
1	Specific goals to be achieved by the project.					
2	Identifying the Qualified vendors to participate in the Program.					
3	Cooperation from the client to the vendors by providing them with access to the work areas that are required.					
4	Validity of the proposal from the date submitted.					
5	Lowest cost proposal is not necessary accepted.					

6	Communication regarding the RFP should be only through the assigned person written in the RFP document.					
	II.3 Sequencing and Scheduling					
1	The successful vendor shall coordinate with the owner to sign the attached contract within (10) days of acceptance.					
2	Arrangement of a schedule of services set forth by the client.					
3	Submission deadlines					
4	Proposal Evaluation Timeline					
5	A schedule of events related to the RFP process.					
	II.4 Vendor Qualifications and References Section					
1	The vendor should deliver the following:					
1.1	The vendor firm's history in field of client project.					
1.2	Evidence of ability to provide sufficient skills and resources to accomplish the contract.					
1.3	References of previous contracts.					
1.4	The vendor can provide information which is applicable while not compulsory in the RFP.					
	II.5 Proposal Submission					
1	The required period of proposal validity.					
2	The client's rights to negotiate, accept or refuse the proposal.					
3	Vendors must submit their proposals on or before the submission deadline					
4	Vendors must primarily meet the requirements outlined to be considered for participation in the project.					
	II.6 Proposal Evaluation & selection criteria					
1	Importance of communicating references and evaluating vendor responses.					
2	The evaluation criteria must be linked to the specifications and requirements in the RFP					
3	Weight factors can be involved in the request for proposals.					
4	RFP must classify all important factors, giving their					

	relative importance, including price.					
5	The general information about the criteria and the evaluation technique to be used must be part of the RFP.					
III. Financial Elements						
III.1 Pricing section						
1	The vendor shall provide the required pricing of each item.					
2	Pricing section concentrates on the price, size, and the function of the product.					
3	The vendor must submit all his expenses in this section to avoid any missed or hidden costs.					
4	Requires the vendors how to provide the pricing data to perform the tasks.					

Please add any elements that you think are necessary:

Thank you for your cooperation.



**جامعة الملك فهد للبترول والمعادن
كلية تصاميم البيئة
قسم الهندسة المعمارية**

السلام عليكم ورحمة الله وبركاته وبعد

الموضوع : تطوير أداة تقييمية لتحديد عناصر (مستندات الطرح في المنافسات RFP) لصيانة وتشغيل المباني العالية في المملكة العربية السعودية

أنا طالب ماجستير بقسم الهندسة المعمارية -جامعة الملك فهد للبترول والمعادن- حاليا أقوم بإعداد رسالة الماجستير بعنوان تطوير أداة تقييمية لتحديد عناصر (مستندات الطرح في المنافسات RFP) لصيانة وتشغيل المباني العالية في المملكة العربية السعودية.

إن أداة تقييم عناصر مستندات الطرح في المنافسات عبارة عن مجموعة العناصر الرئيسية والاشتراطات اللازمة لكل عنصر لضمان شمولية المستندات لكافة العناصر واشتراطاتها في سبيل الحصول على المعلومات اللازمة من وإلى كافة الاطراف .

هيكل الاستبيان يتكون من قسمين رئيسيين هما :

القسم الأول : معلومات عن المستجيب

القسم الثاني : تطوير أداة تقييمية لتحديد عناصر (مستندات الطرح في المنافسات) لصيانة وتشغيل المباني العالية في المملكة العربية السعودية.

أرجو تكريماً تعبئة الاستبيان خلال أسبوع من تاريخه واعادته الى العنوان الموضح أدناه مع فائق امتناني لتعاونكم ودعمكم لهذا الموضوع

قسم الهندسة المعمارية

جامعة الملك فهد للبترول والمعادن

الظهران – السعودية

البريد الالكتروني : g201401880@kfupm.edu.sa

جوال : 0559493998

الاستبيان

1) القسم الأول : معلومات عامة

	الإسم (اختياري)
	اسم الشركة/المكتب/المؤسسة (اختياري)
	رقم الهاتف/الجوال (اختياري)
	البريد الالكتروني (اختياري)
	عنوان الشركة /المكتب/المؤسسة.

2) ما هي طبيعة المنظمة/الشركة التي تعمل بها ؟

	عامة
	خاصة

3) كم عدد العاملين في المنظمة أو الشركة التي تعمل بها ؟

	150-100		50-1
	أكثر من 150		100-50

4) ماهو منصبك في الشركة ؟

	مدير التشغيل والصيانة
	مدير مرافق
	مهندس معماري أو مهندس آخر
	أخرى (يرجى التحديد)

5) كم عدد سنوات الخبرة لديك في مجال التشغيل والصيانة ؟

	من 10 الى 15 سنة		أقل من خمس سنوات
	أكثر من 15 سنة		من خمس الى عشر سنوات

(6) ما نوع المشاريع التي غالبا تعمل بها ؟

مباني مكتبية		مباني تعليمية	
مباني تجارية		مباني سكنية	
أخرى (يرجى التحديد)			

(7) هل عملت في قسم اعداد مستندات الدعوة الى المنافسات ؟

☐

لا

☐

نعم

إذا كانت الاجابة نعم فضلا أجب عما يلي :

(8) كم عدد سنوات الخبرة التي عملت فيها في اعداد مستندات الدعوة الى المنافسات ؟

أقل من عشر سنوات		من 10 الى 20 سنة	
من 20 الى 30 سنة		أكثر من 30 سنة	

5-1		10-5	
15-10		أكثر من 15	

(9) كم عدد مستندات الدعوة للمنافسات والتي ساهمت في اعدادها ؟

القسم الثاني : تطوير أداة تقييمية لتحديد عناصر (مستندات الطرح في المنافسات RFP) لصيانة وتشغيل المباني

العالية في المملكة العربية السعودية

فضلا حدد درجة الأهمية لكل من المعايير أدناه باختيارك أحد معايير التقييم وهي :

مهم جدا بقوة ، مهم ، متوسط الأهمية ، مهم لحد ما ، غير مهم .

مهم جدا بقوة	مهم	الأهمية متوسطة	مهم	مهم	معايير تقييم عناصر RFP
1. عناصر ادارية					
الدعوة لتقديم العروض					
					1 معلومات عامة عن المشروع
					2 معلومات عامة عن المالك / الشركة
					3 ضرورة توقيع وختم الدعوة وتسليمها ضمن العطاء
					4 تعليمات تسليم العطاء
					5 موعد زيارة المشروع قبل تقديم العطاء
					6 وصف مختصر عن أهداف المشروع وانشطته
					7 ضرورة ارفاق اسم المشروع ، رقم المستند ، تاريخ الاصدار ، موعد اغلاق التقديم ، اسم وعنوان التواصل لدى المالك و عنوان المالك
					8 ضرورة الاقرار الرسمي باستلام الدعوة من قبل المقاول.
					9 تسليم الدعوة مناوله الى المقاول
					10 تسليم الدعوة الى عدة مقاولين بشكل عام افضل من تسليمها الى القائمة المحددة سلفا مع المالك
					11 انشاء منصة الكترونية عبر الويب لارسال واستقبال العطاءات واي امور متعلقة بها .
تعليمات المتنافسين					
					1 مكان وتاريخ تسليم العطاء
					2 لغة العطاء
					3 نموذج التسليم الموحد المطلوب من المقاول لتسليمه
					4 أية معلومات اخرى تخص العطاء
					5 عدم قبول العطاءات المتأخرة عن الموعد

6	ض العطاءات التي يتبين وجود د تضارب مصالح في المشروع المحدد في العطاء .				
7	انهاء التعاقد اذا لم يتم توقيع العقد في غضون ثلاثون يوما من اشعار المقاول الفائز بالعطاء .				
8	احقية المالك بتعديل او الغاء العطاء قبل موعد وتاريخ الاغلاق .				
9	عدم قابلية التعديل من قبل الاطراف بعد اغلاق العطاء				
10	مسؤولية المالك فقط عن تكاليف تجهيز واعداد المستندات RFP				
11	السماح بمقاولي الباطن والشراكات مع المقاول الرئيسي				
	لمحة عامة عن المالك /الشركة				
1	ملخص عن مشكلة المشروع محل العطاء				
2	معلومات وخلفية عن المالك وخلفية عن المشروع ومتطلباته العامة .				
3	وصف مختصر عن المجال الذي يعمل به المالك بحيث يعطي تصور وفهم واضح للمقاول عن احتياجات المالك .				
	القوانين والتنظيمات				
1	تزويد المقاول بنسخة من العقد المزمع توقيعه في حال الترسية .				
2	ضرورة اخطار المقاول عن القوانين المتبعة لدى المالك والمعايير المتبعة في البلد فيما يتعلق بالمشروع محل العطاء .				
3	ضرورة اعتبار مستندات التقديم والعطاء المقدم من المقاول جزء لا يتجزأ من العقد .				
	جولة ماقبل تقديم العطاء				
1	يجب عقد الجولة بفترة 10 ايام من تسليم طلب التقديم				

					للعطاءات .	
					يجب اعتبار الجولة (الزيارة) كشرط اجباري من شروط قبول العطاء	2
					ضرورة تقديم التساؤلات والاستفسارات بفترة محددة فقط بعد عقد الزيارة .	3
					موعد ووقت الزيارة يجب وضعها في مقدمة مستندات التقديم .	4
					يجب عمل كشف بالحضور اثناء الزيارة التعريفية بالمشروع .	5
					أهمية الزيارة التعريفية لفحص المشروع وفهم كافة ظروف العمل ومكوناته على الطبيعة .	6
					العقود والترسية	
					ضرورة كتابة اشعار الترسية والعقود وتقرير التقييم بواسطة لجنة مخصصة لذلك .	1
					يجب كتابة خطاب الترسية للمقاول الفائز وخطاب اخر للمقاولين غير الفائزين	2
					قسم المستريات والعقود يجب ان يعالج أي مشكلة تتعلق بمستندات RFP	3
					ضرورة عقد اجتماع مع المقاولين الذين لديهم اي استفسار عن النتائج	4
					عقود المشتريات	5
					اتفاقية المحافظة على اسرار الشركة (عدم الافصاح)	6
					أية مستندات قانونية اخرى متعلقة	7
					الملاحق	
					خطة العمل المتوقع اتباعها	1

2	مخططات توضيحية ودراسات تتعلق بالمشروع محل العطاء .				
3	معلومات احصائية رقمية				
4	خطة نظام الاتصالات في المشروع				
5	قائمة بالمعدات الموجودة				
6	معايير وقوانين المالك المتبعة				
7	قائمة تطلب الخطة المطورة مع التواريخ ومقاولي الباطن المرتبطين ان وجد .				
8	الشهادات المطلوبة والاعتمادات من المقاولين				
9	خطة معدات المشروع الحالية				
10	الجدول الزمني للمشروع				
	2. عناصر فنية				
	مجال العمل والمخرجات المتوقعة				
1	تقديم بيان عمل واضح عما يود المالك انجازه				
2	تقديم جدول للأنشطة التي يجب على المقاول ان يؤديها .				
3	تقديم جدول لترسية العقد وتوقيعه				
4	شرح مسؤوليات المقاول				
5	يجب على المقاول فهم مخرجات البرنامج المتوقعة لكي يتم تطوير العطاءات وفقا لذلك .				
	الشروط العامة				
1	الأهداف الخاصة التي يؤديها المشروع				
2	تحديد عملية اختيار المقاولين المؤهلين للمشاركة في المشروع				
3	التعاون بين المالك والمقاول لتسهيل امكانية الوصول الى الموقع والمناطق المطلوب العمل فيها .				
4	صلاحية العطاء من تاريخ تقديم العطاء				
5	ليس بالضرورة العطاء الاقل سعرا هو المقبول .				

6	التواصل فيما يتعلق بالمشروع والعطاء يجب أن يتم خلال الشخص المعين المذكور في ال RFP				
	الجدولة والتسلسل				
1	المقاول الفائز بالعطاء يجب أن ينسق مع المالك لتوقيع العقد في غضون 10 ايام من القبول .				
2	ترتيب جدولة الخدمات اللاحقة تكون عبر موافقة المالك				
3	ترتيب مواعيد التسليم الحرجة				
4	الخط الزمني لتقييم العطاءات				
5	كافة الفعاليات والاحداث المتعلقة بعملية ال RFP				
	قسم مؤهلات المقاول والمرجعيات				
1.1	يجب على المقاول تقديم ما يلي :				
1.2	تاريخ الشركة وخبراتها فيما يتعلق بما يشابه مشروع المالك				
1.3	اثبات القدرة لتوفير المهارات اللازمة والكافية والموارد المطلوبة لانتهاء الاعمال .				
1.4	قائمة عقود لمشاريع سابقة مماثلة				
1.5	يستطيع المقاول تقديم أي شيء يدعم امكانياته بشكل اختياري ولم يرد في ال RFP				
	تسليم العطاءات				
1	الفترة اللازمة لصلاحيه العرض				
2	احقية المالك للتفاوض والقبول أو الرفض للعطاء				
3	يجب على المقاول تقديم عرضه عند او قبل انتهاء الوقت المحدد للتسليم .				
4	على المقاول ان يلبي المتطلبات المحددة كاملة في مستندات التقديم والخاصة بالمشروع				
	تقييم العطاء والية الاختيار				
1	أهمية الاتصال بالمراجع السابقة للمقاول والتقييم على				

					حسب تجاوب المقاول .	
					الآلية التقييم يجب ان تكون مرتبطة بالمواصفات والمتطلبات المذكورة في ال RFP	2
					يمكن ادراج نسب التقييم في مستندات العطاءات RFP	3
					يجب على المالك تصنيف العوامل واهميتها واعطاء نسب اهمية واضحة شاملة السعر .	4
					المعلومات الخاصة بالآلية التقييم والاختيار المستخدمة يجب ان تكون جزء لا يتجزأ من ال RFP	5
					3. عناصر مالية	
					قسم التسعير	
					يجب على المقاول تقديم الاسعار اللازمة امام كل بند	1
					قسم التسعير يركز على السعر ، والحجم ووظيفة المشروع .	2
					يجب على المقاول حساب كل التكاليف في هذا البند لتلافي أي تكاليف مخفية او غير ظاهرة .	3
					تقديم تفاصيل كاملة عن كل البنود بحيث تكون دقيقة بحيث تكون الأسعار دقيقة وواقعية	4

فضلا اكتب أي عناصر اضافية ترى ضرورة اضافتها في الاستبيان .:

APPENDIX II

LIST OF THE TARGETED ORGANIZATIONS DURING QUESTIONNAIRE'S DISTRIBUTION.

Organizations	Surveys distributed	Surveys received
Sawaid Real Estate Dev.	1	1
Sumo Holding Co.	1	1
Alhakmiyah Holding Co.	1	1
Alfozan Holding Co.	1	1
Mashorah Engineering Co.	4	4
Retal Development Co.	1	1
Nesaj Development Co.	1	1
Jenan Holding Co.	1	0
Jenan Hotels And Resorts	1	1
Qurba Real Estate Development Co.	3	3
Altwairiqi Holding Group	1	1
Alothman Holding Group	1	0
Alyaum Press For News.	2	2
Amaar Real Estate Development Co.	1	1
Fawaz Alhokair Group	1	0
Pro. For Properties Management	1	1
Century 21 For Real Estate	4	3
Alhugayet Group	1	1
Amlak International Co.	1	1
Arcon Contracting Co.	1	2
Alzahid Group	1	1
Alhugait Holding Co.	1	1
Alzamil Holding Group	1	1

Majd Development Co.	1	1
Abdulla Fouad Holding Co.	1	1
Alsubaiee Holding Co.	1	1
Mefma (Middle East Facilities	3	2
Musanadah For Operation And	1	1
Thulathiyah For Supporting Services	1	1
Mada Eastern Real Estate Co.	1	1
Rikaz Real Estate Development	1	0
Baan Real Estate Development	1	0
Alsulaiman Real Estate Co.	1	0
Alansari Holding Group.	1	1
Asas Wa Arbah Investment Co.	2	1
Alabdulkareem Holding Co.	1	1
Mozon Real Estate Co.	1	1
Bawabt Aldar Real Estate	1	1
Fifth Dimension Investment Holding	2	1
Maban Real Estate Investment	1	1
Saudi Tharwa - Almuheidib Group	2	2
Basma Properties Management	1	1
Edarah Property And Facilities	1	1
Amana Properties Co.	1	1
Dur Hospitality Co.	1	1
Tadbeir Property Management Co.	1	1
Amjal Property Management	1	0
AD Engineering co.	4	4
Total	65	55

VITAE

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- He is founder and CEO of Stonehenge Engineering Office –Yemen since 2012.
- He has a membership in PMI,SCE,MEFMA and SAVE.
- Working as a projects manager in Non-profit organization related to engineering services.